ComputerWeekly
Thursday, January 13, 1983

Unfair dismissal claim upheld

by John Riley

A SHEFFIELD industrial tribunal last week upheld technical writer Jenny Wright's claim of unfair dismissal last May from local software house EDP – but rejected the argument that the dismissal had been for trade union activity.

The tribunal decided that she had been made redundant but criticised EDP for the way in which this was carried out.

Its report concluded "because of the failure to consult, because of the way the dismissal was carried out and because of the failure to consider, let alone offer her alternative employment, the unanimous decision of the tribunal is that the company acted unreasonably."

The tribunal left the two parties to try to agree a remedy – reinstatement, re-engagement, or compensation – over a period of a few weeks.

Wright's reaction was that she is: "Very pleased. It would have been better if we had got a ruling of unfair dismissal for trade union activity. We didn't quite prove the case although there was strong circumstantial evidence. The report was critical and we're sticking out for re-instatement."

The report hit out at EDP stating that "neither director was entirely credible as a witness for a variety of reasons," and the tribunal expressed "surprise that an employer which is engaged in marketing one of the most modern products in industry should deal with its employees in a manner rarely encountered since the concept of unfair dismissal was incorporated in an Act of Parliament."

ASTMS national organiser Tim Webb said: "This is one of the most scathing indictments I've ever read from an Industrial Tribunal."

But Richard Jowitt, managing director of EDP, said that he is "delighted" with the decision. "It was a slap on the wrist for not observing proper procedures. This is a political dispute and with the question of law and interpretation being doubtful in this area, the union got off on the wrong horse to start with and they are at fault."

He continued, "I can't comment on my credibility because I gave evidence truthfully. Even though they accepted the appellant's evidence they found she wasn't dismissed for anything other than credible reasons."

The first hearing of 17 of the other EDP employees who struck in sympathy with Wright's dismissal, believing it to be because of her union activity, is on January 24. This will decide whether there is a case to answer.

WRIGHT . . . "Very pleased, but sticking out for re-instatement."

Philips and AT&T join in phone venture

by Donald Kennett

PHILIPS and AT&T International have confirmed their plans to set up a joint venture company to develop and sell digital public telephone exchanges.

An agreement in principle was signed last week under which a company owned equally by Philips and AT&T will tackle the world market outside the US from a base in Holland starting this autumn.

The base is likely to be at or near the Hilversum plant where Philips is developing its own digital public exchange, the PRXD. It will be run by staff from both companies.

Details of the new company such as its name and how much money will be put into it are to be discussed over the next couple of months. Studies will also be made on how far the co-operation between the two parents can be extended beyond the initial adaptation and manufacture of AT&T products for the world market.

Transmission systems are the first likely extensions and the partners may consider taking Philips products to the UK market.

The partnership is AT&T's first major venture outside the US since it set up a London office late in 1981 to research overseas opportunities.

Philips has been pursuing numerous international partnerships such as one for joint basic research with Siemens in West Germany, another in optical fibre technology with M/A Com in the US, another in cellular radio telephone systems with CIT-Alcatel in France and another in integrated circuit production for its Domestic Digital Bus with Intel in the US.

Lloyd's leasing case comes to court in US

by George Black

LLOYD'S of London must show that Federal Leasing was negligent in trying to re-lease its returned IBM mainframes, if the underwriters are to escape paying $560 million to the American firm.

The dispute came to court this week in Maryland. A total of 55 Lloyd's underwriting syndicates, led by E. F. Williams And Others, are cited in the 168-page complaint by the leasing firm based in Maclean, Virginia.

Seventeen insurance companies are also involved in the lawsuit. Federal is seeking $500 million in punitive damages, $50 million in compensatory damages and $10 million for claims which it is alleged are outstanding.

The court will have to decide whether Federal Leasing exercised due diligence in avoiding trading losses and whether any claims are valid or whether Federal should repay any amounts which it has already received from Lloyd's.

A number of banks will also be watching the proceedings closely, as they were the original lenders to Federal.

Lloyd's defence will rest largely on the argument that Federal did not try hard enough to re-lease the equipment. "One would expect any insured company to act as if it were not insured, in order to try and achieve profitability," said a Lloyd's spokesman.

The case stems from the rapid depreciation of some IBM mainframes, notably the 370 range, during 1979, when IBM introduced the 303X's and the 4300s. The latter were outstandingly successful, to the extent that the 370s began to look obsolete.

The cornerstone of Lloyd's underwriting was an estimate of how fast the machines would lose in value. Under the special Lloyd's J policies, old machines were typically assigned residual values of 50% after three or four years; whereas the true value often turned out to be 25% – if clients for re-leasing could indeed be found.

The legal action began in June 1979. Lloyd's has been making interim payments to Federal since April 1980 to prevent it going bankrupt. Lloyd's had stopped making any such payments, but the US appeal court ordered it to resume and $41 million worth of claims has already been paid over.

Inmos to get emergency govt cash

by Kevin Cahill

A MAJOR cash crisis at Inmos, the state-owned chip maker, has forced the government to consent to a substantial cash injection by the British Technology Group.

The crisis had become so acute that sources close to Inmos said that there was some doubt that the company would be able to meet the January payroll without immediate assistance.

The funds for Inmos, which are likely to be announced later this week or early next week, will consist of a limited amount of cash from the British Technology Group supported by government guarantees.

Despite the size of the funding most commentators see the measures as a stopgap pending the privatisation of Inmos, which has factories in Colorado in the US and at Newport in Wales.

The size of the crisis and the speed at which it developed took both the BTG and the Department of Industry by surprise.

At the Conservative Party conference in October, Industry Minister Patrick Jenkin had said that any further funding for Inmos must come from the private sector.

The BTG subsequently made it plain that although it foresaw a need for about £10 million to get Inmos through next year, there was time to solve this problem.

Sir Frederick Wood, BTG chairman, admitted in his late October presentation of the NEB accounts that Inmos would need £50 million if it was to become a viable international chip producer.

Sinclair set to make £190 million (on paper)

by Kevin Cahill

COMPUTER entrepreneur Clive Sinclair is poised to rival the founders of Apple in the instant multi-millionaire stakes and gain a paper fortune of £190 million.

Although no official statement is available from either Sinclair's bankers N. M. Rothschild, or from Sinclair Research, it is known that the placing or sale of 10% of Sinclair's holding in Sinclair Research has been completed in well under the three weeks originally forecast for the operation.

City commentators have suggested that Sinclair himself will receive anything between £10 and £20 million for the 10% stake he is offering to the City as a preliminary to a full listing.

Sinclair currently owns 95% of the shares in his company and the £20 million figure, which is based on a standard multiple of ten times this year's forecast profits of between £10 and £20 million, will give Sinclair a paper value of £190 million.

According to brokers, this is one of the largest paper fortunes ever made in the City of London.

Last year Sinclair Research made a profit of £10 million on turnover of £27 million.

This year the company is forecasting £50 million turnover.

LINE NOISE

DOES the neat solution to the different problems of chip manufacture faced by Zilog and Commodore mark the start of a long-term connection beyond run-of-the-mill technology exchange deals?

From Easter, Exxon Office Systems, another branch of Zilog's mother company Exxon, will incorporate the System 8000 – the star of Zilog's systems business – into its own products, and will assemble System 8000s in its East Coast plant.

Commodore has been casting around to buy more chip processing capability, and a "rationalised" Zilog, with systems business transferred to Exxon Office Systems, would look good. Zilog has consistently lost money, and Exxon has not been slow in the past to slough off other sluggish high tech ventures.

Watch out for Exxon to cash in its Zilog chips and Commodore to pick them up.

A FEW surprises are in store from BIS, the UK consultancy and market research group which has made a habit of picking up Queen's Awards. The company is looking "intently" at takeovers and managing director Roger Graham says an announcement can be expected in the next 90 days. It will involve a UK company involved in BIS' main markets.

And BIS' 64% growth last year looks set to continue! Graham says the company is already well on the way to smashing his forecast of £20 million turnover and £2 million profit this year.

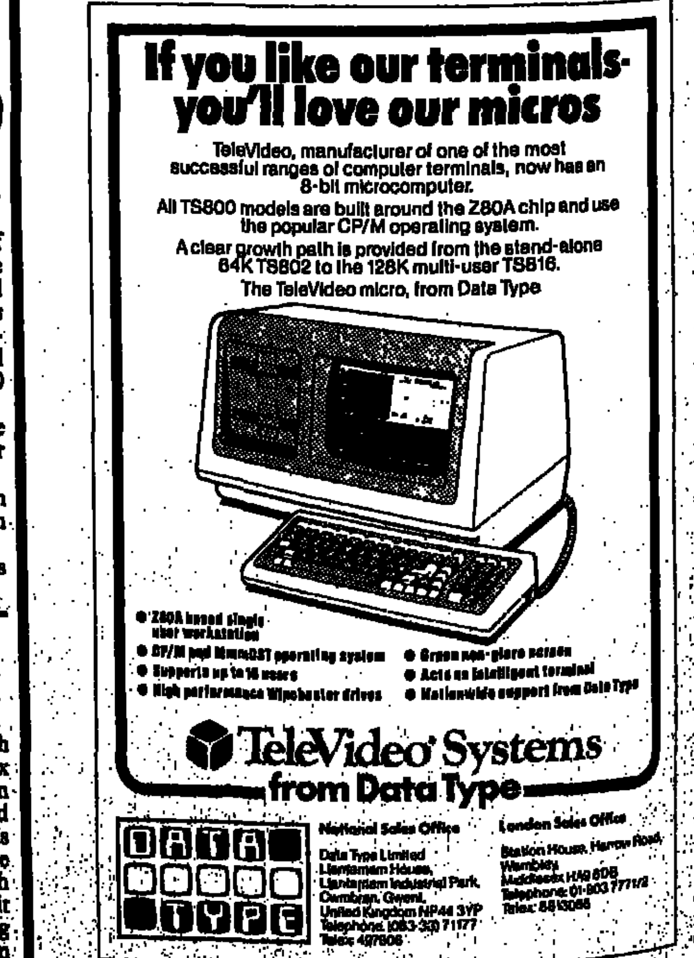
EEC telecoms ruling

by Donald Kennett

THE European Commission has applied the Treaty of Rome rules on competition to a telecommunications case for the first time.

The decision could have far-reaching consequences for international telecommunications – and it could spark a major row between the governments of member states because in almost all of them, except the UK, telecommunications are run by government departments (as they were in the UK until 1969).

Under the decision British Telecom is obliged to allow telex bureaux to accept messages from overseas countries for onward transmission to other overseas countries. Some bureaux have been doing this already, although since 1978 BT has forbidden it under its conditions of providing the service after complaints from other telecommunications authorities (PTTs) that the practice was depriving them of revenue.



ComputerWeekly
Thursday, January 20, 1983 Number 843 35p

STC moves into micro distribution

TELECOMMUNICATIONS giant STC is to launch itself into the microcomputer market next week with the formation of a subdivision of its Instrument Services division. It will distribute a range of micros and peripherals including products from DEC and Hewlett-Packard.

There are no plans at present for any manufacturing.

Vote for Wilmot

ICL supremo Robb Wilmot has been voted computer industry personality of the year in the 1982 Recognition of Information Technology Achievement (RITA) awards. Other finalists were Kenneth Baker, Alan Benjamin and Mike Aldrich.

Don joins Ken

A UNIVERSITY computing director has joined Information Technology Minister Kenneth Baker as an unpaid adviser for six months. Dr David Hartley of Cambridge University is getting his salary from the university for a sabbatical which could be extended to a year. He will advise on the follow-up to the Department of Industry's Alvey Committee report on the future direction of UK research in computing.

Hartley

Imperial spirit

IMPERIAL Software Technology has won a £100,000 EEC contract to study the requirements for software engineering databases. This is one of the pre-pilot projects currently being undertaken for the EEC Esprit project. The pilot projects start in the late Spring, and about 700 proposals, including many from the UK, have already been received.

In chambers

MANCHESTER'S Chamber of Commerce is to be the first in the UK to set up a computer section. It aims to boost computer companies in the North-west. There are about 90 chambers of commerce in the country and Manchester's is the third largest.

Govt puts £3.5million into robots expansion

by John Kavanagh

A £10 MILLION expansion which will create 250 UK jobs is under way at Unimation Europe, a subsidiary of the world's leading industrial robots manufacturer. The plan involves £3.5 million of public money from the National Research and Development Corporation and the Department of Industry. It is also expected to bring new jobs to UK subcontractors.

The move has been hailed by Information Technology Minister Kenneth Baker as a "major step forward in the government's policy of encouraging the establishment of Britain as a major robot supplier".

Unimation Europe builds robots for Europe in Telford, Shropshire. The expansion plan covers the design of a new robot at the UK factory and extension of manufacturing to Unimation's entire Puma robot range, including the modification of the products for Europe. In addition a £3 million development centre is being set up to tailor complete robotics systems from Puma components to customers' needs.

The plan will increase the number of jobs at Telford from 120 to almost 400 by 1988. Exports will rise from the current £4.5 million, or 60% of production, to £20 million. The UK content, coming almost entirely from sub-contractors, will rise from 75% to over 80%

US-based Unimation started building robots in the UK in 1979 with National Research and Development Corporation backing of £420,000. That money will be paid back this summer, some months ahead of schedule.

The corporation's lastest £2 million investment will be paid back as a levy on sales. The Department of Industry's £1 million contribution is a grant.

Unimation's only other European office is in Germany. Elsewhere it sells through agents.

BL has been Unimation's main UK customer, although managing director Roger Cakebread said many companies now had machines for evaluation. "UK industry is getting the message, and the UK is currently our best market," he said.

"We have never found problems with unions: the main problem in Europe is management who are nervous of automation."

Big guns up stakes for micro market

by Robert Parry

THE leading mainframe, the leading minicomputer, and the leading microcomputer companies steamed in with major UK announcements about their personal computers in the past week. And all are going for the market with a vengeance

DEC, announcing its UK distribution and software arrangements, said micro sales would account for one-third of its turnover in three years.

IBM, at last, has launched its personal into the UK. And the long-awaited Lisa micro from Apple was unveiled yesterday (Wednesday).

The weight of the announcements, although expected for some time, adds fuel to predictions that micro sales will overtake minicomputer sales this year, and mainframe sales by 1986.

While IBM and DEC are hastily covering their backs and investing heavily in micros to avoid being squeezed out of the fastest growing sector of the computer market, the company that started it all, Apple, hopes that Lisa will propel it into the big company office market.

The IBM announcement, made by UK assistant general manager Tony Cleaver, settles the doubts that have surrounded how the machine will be distributed here. IBM will sell the PC through established microcomputer dealers, IBM Retail Centres, and a special "bulk purchase" sales unit. Cost of a basic system is £2,080, and a typical larger system with 128K of RAM and two 320 Kbyte floppies is £3,442.

CLEAVER . . . Making it official for the IBM PC.

European production will take place at IBM's Greenock, Scotland plant, with some 80% of the output scheduled for export. Some 120 new IBM jobs and 250 new subcontracting jobs will be created.

The impact is strengthened by the announcement of further software for the machine. Peachtree has its accounting packages and office productivity tools running under PC-DOS, while Micro Focus has come out with Personal Cobol, a version of its Level II Cobol designed to take advantage of screen and keyboard features of the PC. Digital Research is now to sell CP/M-86 for the PC directly, at £42, and has announced a Logo interpreter to run on the machine.

■ See page 17 for leader comment and back page for user reactions.

DEC too will be selling on its name and the completeness of the service it will offer. "No other company has such comprehensive plans for personal computers," claims UK managing director Darryl Barbe. "We will set the standards."

This year DEC intends to ship at least 200,000 units worldwide, putting the personal computers well on track to overtake the teenaged PDP-11 range next year. PDP-11 sales have now topped 300,000. Within three years the personal computer line will account for a third of DEC's business, says Barbe. He adds that DEC has spent more than a billion dollars on the personal computer project already. The view of the vital importance of the personal computer end of the range, taking over from the small to medium sized minis, bolsters Wang's prediction last week that its Professional Computers will make up 40% of its UK business this year.

The DEC personal computers will be sold through authorised dealers and by DEC's own direct sales force. "There will be 150 to 200 outlets across the country," says DEC's UK small systems business manager Lawrie Cattell. "You can expect to see one in every major city soon."

So far 33 companies, representing 55 outlets for the machines, have been signed up. These include Computerland, Software Sciences and the Xerox Stores.

COBB . . . Taking Apple to the office with the long-awaited Lisa.

The machines they will sell range from the £2,400 Rainbow 100 to the £3,400 Professional 350. All come with a year's free warranty and will be available for volume delivery from March.

DEC has set up a production site in Reading to handle reproduction and distribution of software for the micros.

Apple's announcement of Lisa marks the end of the company's secrecy over its first new machine for over two years. Lisa is much as expected, a 68000-based 16-bit machine, making much use of integrated software and a mouse (a hand held device to move a pointer

■ Turn to page 6

Harris to launch two superminis 3

High-tech 'darling' of the City 22

Computer national service for France? ... 6

Software File 7
Micro News 8/9
Company News 11
News Analysis 12
Interactive Video 14
Platform/Profile 16
Downtime by Chad 16
Lifeware File 16
Leaders, Letters 17
Workplace, Puzzler 20
People/Diary 21
Computer Financing 22/25
Marketplace 26/27
User Survey 28/29
Contract Jobs 48
Sales Bit 53
Top Jobs 35
Job Vacancies 30/55

Telecoms bodies are upset by telex ruling

by Donald Kennett

A SIZEABLE part of the world telecommunication establishment has been thrown into disarray by a European Commission ruling on a complaint against British Telecom.

The Commission set a number of precedents in the ruling, reported in last week's issue, that a UK-based private telex bureau must be allowed to provide transit services for messages between two or more other countries at rates which undercut some European PTTs' prices for direct links. The bureau used BT's links, which cost as little as a quarter of some other PTTs' prices on some routes.

But most significantly the ruling established that the Treaty of Rome rules on competition applied to telecommunications as much as to any other industry.

The case involved the telex network, but the Commission says that the principles apply equally to any other networks.

Users, represented by groups such as the Telecommunications Users' Association and the Computing Services Association are delighted. They have campaigned for the fullest possible introduction of competition since the UK government first started investigating the subject.

Disarray is evident among the telecommunications authorities, however. A spokeswoman for the Department of Industry, which took over responsibility for telecommunications from BT under the 1981 British Telecommunications Act, said it was not a matter that the department cared to discuss with the Press.

The ruling applied to a specific BT contract, and any other application of the principle was hypothetical, she added. In the event of a complaint involving the DoI, the matter would be referred to the International Telecommunications Union in Geneva. Until such time as the Office of Telecommunications (Oftel) was set up, the DoI lacked the expertise to deal with such matters itself.

The ITU said that such issues were discussed within CCITT (the International Consultative Committee on Telegraphy and Telephony – a part of the ITU) and rarely referred to the parent body.

CCITT director Leon Burtz pointed out that the body is merely advisory and its members are not obliged to follow its recommendations, which are arrived at by consensus among them. He was very concerned about the ruling, however, and thought that it would be discussed at the CCITT meeting in Geneva next month. Other countries might follow the precedent, but to change the CCITT Recommendation that the ruling had invalidated (at least for European members) would again require consensus.

Bernhardt Vree, head of the international department of the Dutch PTT, said: "As a member of CCITT and CEPT (the Conference of European PTTs) we are concerned that a European Commission ruling is contrary to our carefully worked out agreements, but I don't know how we will react to it. We think about it along different lines from how they think about it at the Commission – it could be different for countries other than the UK."

Herr Bisernitz, head of international telex at the West German Bundespost, said: "There is not much we can do about the UK. We are trying to bring down our rates for intercontinental connections and our US traffic rate is no more than you would have to pay via a UK bureau." But other European countries could not match the UK rates in many cases, because the UK had been able to negotiate a lower pass-on fee with Commonwealth countries. This was unfair, he thought.

German companies were unlikely to apply to the EEC to run transit services, he added. "But we are very worried about the ruling, because it opens a free field for UK agencies to take traffic from our network."

☐ See News Analysis, page 12.

COLIN CROOK . . . Zynar will use Ethernet eventually.

BT puts off price rises after £268m profit

by Donald Kennett

BRITISH Telecom's half-year profit to last September, at £268 million, was three times the figure from the same period in the previous year. But the previous profit of £89 million has been revised downwards from the published figure of £140 million under new accounting practices designed to "reflect the competitive environment introduced under the British Telecommunications Act 1981 and in the light of technological change".

Chairman Sir George Jefferson said the improved results came from the price increases made in November 1981, from business growth and from improved efficiency. Further price increases, already postponed from last November until April, will now be put off until July or later. The Post Office Users' National Council has called for them to be put off until the end of the year.

The number of subscribers on the network was 425,000 higher than in September 1981 and the number of calls handled was 5.5% up on the first half of 1981. Revenue was up from £2.7 billion to £3.1 billion. Capital investment for the year 1982-83 will now be only marginally up on last year at £1.5 billion instead of the £2.2 billion it expected to spend.

JEFFERSON . . . More efficient.

BACS

Software opens BACS to small businesses

by John Kavanagh

THE BACS automated bank clearing system has been opened up to small businesses with the launch of a £150 software interface for microcomputers running the CP/M and MP/M operating systems.

The package, believed to be the first of its kind, is from Comley Computer Services of Guildford, Surrey. It writes details of direct debit payments in BACS format to eight-inch floppy discs, cutting the handling of paperwork.

Comley is offering the package to systems houses and manufacturers. The UK floppy disc manufacturer Bicon Research of Cambridge has taken the product and sells it with its drives at £1,400.

BACS extended the range of magnetic media it accepts from tape to eight-inch floppy discs last April. About 150 firms send data on floppies. They account for 500 discs and 110,000 transactions a month. This is a tiny proportion of the 50 million transactions BACS handles on its ICL mainframes. A 5.25-inch floppy disc option is expected to be introduced this year.

■ Bicon, formed in 1978 and now with 15 staff making two or three drives a week, is preparing to launch a Winchester fixed disc unit next month.

Tandy sets standard

by George Black

TANDY, the huge American electronics group, is to take on the Logica-Microsoft Xenix operating system as standard for its Model-16 micro. This is the first major announcement of the Unix-lookalike being matched to a Motorola 68000-chip machine.

Tandy, which introduced its TRS-80 Model-16 to the UK in November, says the decision will set a standard for multi-user micro operating systems.

The Model-16 uses the new 16/32-bit chip as well as the older Z80A. It was launched in the US during 1982.

Logica, the £40 million British software house, last week signed a deal with the American Microsoft to co-operate on the promotion of its Xenix product. Under the new agreement Logica is to port the operating system to the growing range of 68000-based micros.

The Tandy connection is a crucial one because Tandy has world computer sales of $660 million a year including £8 million in Britain.

Computing alleviates jobs gloom

by John Kavanagh

COMPUTING is the only bright spot in a bleak picture of job prospects for graduates leaving university this year. Graduates are needed in the hardware and software industries, while the growth of office automation is giving people with high levels of education a lead over others in the job stakes.

These are the conclusions of three organisations specialising in gathering graduate career information, which have pooled their data to produce a gloomy view of the jobs market.

Their report forecasts an increase in demand for graduates from the electronics and computer industries but uncertainty about other areas – and even where there is a clear picture it is one of decline.

"Without the growth of computing things would be very bleak indeed," said Brian Putt, director of the Central Services Unit for Careers and Appointments Services, one of the three bodies.

Putt said many jobs were becoming more complex because of the use of computing, giving graduates an advantage over others. At the same time automation of office jobs and consumer services demanded new people able to understand, plan and install the systems.

New but small companies with a high proportion of graduates had sprung up in the software market.

Zynar chooses Arcnet for 'professional' local area network

by Donald Kennett

ZYNAR has adopted Datapoint's Arcnet for the "professional" local area network it launched last week. The network, called Plan 4000, supports the IBM Personal Computer as well as Apples II and III which are supported on Zynar's earlier network, the Cluster One.

Zynar, owned by Rank Xerox, expects to use Xerox's Ethernet LAN eventually. But managing director Colin Crook said: "We are aware of how complicated Ethernet is and no way could we have products ready for it before 18 to 24 months from now.

"But we can transfer files to that network, because we use its Internet protocols at the Transport level of the ISO networking model."

Plan (Personal Local Area Network) runs at 2.5 Mbits-per-second, compared with 250 Kbps on the earlier Cluster One. It uses coaxial cable as against 16-way ribbon cable and the "token-passing" access method as against CSMA/CD (carrier-sense multiple access with collision detection).

VLSI chips implementing the design are already being made for Datapoint by Standard Micro Systems.

UK deliveries are due to begin in April, although the first system has already been installed at Hovland Business Systems of Windsor. Hovland has a contract to develop a worldwide branch network based on Plan 4000 for a large US bank.

The new network is compatible with the old at operating system support level, so applications written for a station on the old can run on a similar machine on the new one. Messages and files can also be passed between any type of station on either type of network and any other type of station on the other network.

Network interfaces have been implemented for two operating systems on each of the machines, including CP/M on the Apple II, and PC DOS and UCSD P-System on the IBM PC.

The Plan 4000 file server is based on a Motorola 68000 16-bit microprocessor and it can provide up to 548 Mbytes of storage space on four Winchester disc drives.

Other servers available include telex, IBM 3270 interactive and IBM 3780 batch communications servers and a printer server capable of controlling several different types of printer.

The company expects typical installations to cost between £40,000 and £70,000 for a file server, printer server and from 10 to 20 workstations, compared with up to £30,000 for a Cluster One with similar numbers of lower performance devices. The Plan 4000 interface card costs £600 for each station.

Trading with France?

Recent legislation makes the use of French compulsory for all documentation, manuals etc. (See CW, January 13th)

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Harris to launch two superminis

by Kevan Pearson

HARRIS Systems will next week launch an all-out attack on the top of the supermini market with two new systems offering significant price/performance improvements over Digital Equipment's Vax products, according to UK general manager Frank Walters.

And Data General is hoping to launch its MV10000 top of the line model early in February.

Harris' two new machines, the H800-2B and the H800-2BP, are slotted to take on DEC's Vax 11/780. The 2B is said by the company to offer comparable performance to the DEC machine but at a 15% price advantage, and the more powerful 2BP machine outstrips the Vax 11/780 by 30% for the same price.

Both superminis feature Harris' 48-bit architecture, in comparison with the 32-bit processing offered by the other supermini manufacturers. They also incorporate pipelining, for the parallel execution of instructions, and parallel processing.

Also included in each is an integral hardware floating point processor for scientific processing.

They can support up to 128 concurrent users in the full range of conventional supermini applications areas. And the H800-2BP also has 6 Kbytes of bipolar cache memory. The smaller 2B model is field upgradeable to the top specification machine.

Both offer considerable space savings over previous H800 machines and are housed in single cabinets, incorporating their associated disc and tape drives. The company claims that the new models occupy just one-third of the space needed by the ones they replace.

Also included as standard is Harris' recently announced Communications Network Processor (CNP). This device is designed to take the task of controlling communications away from the CPU. It supports synchronous, asynchronous, isosynchronous and X25 protocols.

And Harris has unveiled a new memory module, the Integrated Memory Subsystem (IMS), which is standard equipment on the H800-2B and 2BP. It will be available as an add-on module to other Harris processors. The IMS incorporates the functions of an I/O channel controller and a disc controller on a single board along with memory arrays.

It can be configured with up to 12 Mbytes of real memory with a typical access time of 250 nanoseconds, the company says.

■ Few details are available on Data General's MV10000 launch, scheduled for February. It is expected to use a new processing engine rather than a stretched version of the company's MV 6000 and 8000 products.

WALTERS . . . Significant improvements over Vax products.

Scottish £1.5m push in Europe

by John Riley

THE booming young Scottish computer manufacturer, Future Technology Systems celebrated the New Year with a £1.5 million push into Europe, and at home it is spearheading a computerisation programme in Scottish schools.

FTS, launched in 1980 with aid from the Scottish Development Agency, last week announced a contract with its first European distributor, the Dutch company Daisy Systems, which will get 300 of FTS' Series 88 computers initially. It will sell those in the Netherlands with its own Daisy printers.

The Series 88 is a multifunction small business computer with distributed processor architecture designed to solve the problem of systems expansion.

It is based on independent user workstations, each with its own 16-bit Intel 8088 microprocessor and 64-512 Kbytes of memory. Its first full production year was 1982, when it won a British Technology Group prize.

Software financing seminar success

by Kevin Cahill

"SUCCESS indeed", is how Doug Eyeions, the Computing Services Association director-general, described the 150-strong attendance at the first Computer Software Financing conference last week.

Backed by the CSA, and with support from Barclays Bank and the Department of Industry, the meeting attracted not only companies looking for money, but one of the best turnouts yet by the finance industry.

Two of the major clearing banks, Barclays and Midland, each sent four staff to take enquiries from would-be borrowers – and plenty they got too.

The conference was opened by John Butcher, Parliamentary Under-Secretary at the DoI, who pleaded with the industry to come and "persuade the government to increase the £10 million already allocated to the software product development scheme."

Butcher was non-committal on the Small Firms Loan Guarantee Scheme which is due for review shortly.

Under this scheme the government guarantees 80% of loans up to £75,000 made by specially designated finance sources, which include all the UK's main banks.

This form of loan has been highly successful.

The loan is particularly appropriate for software companies because the banks have had difficulty in deciding just how to treat software as an asset, and subsequently as collateral for loans.

This may have been why Barclays speaker Jon Sanders emphasised the importance of the scheme and asked the government to "continue putting its money where its mouth is."

SANDERS . . . "Govt must put money where its mouth is".

Strike at Timex would end Sinclair contract

by Robert Parry

SINCLAIR Research is ready to pull the plug on production of its ZX81 and Spectrum micros at the Dundee Timex factory. Workers there are threatening strike action if management calls for compulsory redundancies, following the loss of the Nimslo 3-D camera contract and Timex' decision to stop mechanical watch production.

"If the threat of strike action is not removed in discussions between management and unions, and a full strike seems inevitable, we will move our business elsewhere – probably permanently," says chairman Clive Sinclair.

This move would not only affect the machines currently being assembled by Timex for Sinclair, but would also apply to future products Sinclair had planned to manufacture in Dundee, bringing new jobs into the factory, Sinclair adds.

These future products include the Microdrive add-on storage unit for the Spectrum and the flat screen television.

"We would take this decision with great regret," says Sinclair, emphasising the high quality and high production levels of the micros produced in Dundee.

There are 600 Timex employees manufacturing the Sinclair machines. They turn out 60,000 ZX81s a month, and the majority of the 40,000 Spectrums a month being produced. The rest of the Spectrums come from Thorn-EMI.

Timex management is looking to shed 1,900 of the 4,200 employees.

Following strike action at the Timex plant at the end of last year, when Sinclair lost a week's production from the Dundee factory, Sinclair cast around for potential alternative suppliers.

According to a Sinclair spokesman, production could be switched to other companies within 48 hours, without any loss of continuity.

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Read Cursor Address	✓	✓
Detachable Keyboard	✓	✓
Separate Function Keys	11	10
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Insert/Delete Character Key(s)	✓	✓
Erase End of Line/End of Page Key(s)	✓	✓
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French Telecoms Minister Mexandeau . . . Extends Teletel trial.

France to extend its Teletel trial

by Jack Gee

FRENCH Telecommunications Minister Louis Mexandeau has announced that the trial of Teletel, France's interactive videotex system, which has just completed its scheduled 18-month test in a Paris suburban community, is to be extended.

At present 2,500 homes in the Velizy area – south-west of the capital – are equipped with Minitel terminals. About 300 will soon also have "Smart Card" readers to enable them to conduct electronic banking operations.

Mexandeau said that the electronic telephone directory whose information is available to subscribers via Minitels in and around Rennes would be extended during the course of the year to a wider area of Brittany.

By the end of 1983 about 250,000 Minitels will be in service. So far 600,000 terminals have been ordered from manufacturers. During the current year 300,000 more will be contracted for. RTT-LA Radiotechnique, the French offshoot of Philips, Compagnie Générale D'Electricité's subsidiary Telic, and Matra will have equal shares of this new Minitel order.

Teletel's electronic directory.

European PTTs hold back boom in teleconferencing

by John Kavanagh

A WHOLE new industry is emerging in the US with a 2,000% increase in the use of teleconferencing for business meetings expected between 1981 and 1986.

But in Europe the growth of teleconferencing is being held back by the rate at which national communications authorities move to wideband satellite services and digital networks.

These views on a potentially far-reaching market come from the US market research company Quantum Science, which has added a report on teleconferencing to its $11,000 series on communications.

British Telecom is experimenting with personal teleconferencing workstations in customers' offices.

Quantum says the number of business meetings held using teleconferencing in the US will grow from 89,400 in 1981 to 1.8 million by 1986 to create a $580 million market for suppliers of equipment and transmission services.

The biggest slice, $235 million, will be transmission services. Spending on workstations combining voice and facsimile will reach $220 million. And $123 million will go on equipping 1,380 rooms for full video and freeze frame transmission. Freeze frame video involves sending a frame every few seconds. It is suitable for discussing and amending documents.

The suppliers are falling into defined camps: Transmission services only – these companies include RCA, Western Union and IBM's Satellite Business Systems – equipment only and turnkey systems. And a handful of new companies are setting up shared teleconferencing rooms in hotels and office blocks.

But Quantum says the suppliers still have to beat human factor problems to get the predicted growth. Harry Hoyle, senior vice-president for Europe, said factors such as the position of the cameras, the room temperature and whether people sat in rows or a horseshoe made all the difference in getting acceptance of teleconferencing.

Hoyle added that although travelling costs were companies' main criteria for choosing teleconferencing, once they were used to it travelling took second place to convenience. "The driving force soon becomes the convenience of people in different locations, even those close together, being able to get together for ad hoc meetings," he said.

Quantum says the equipment suppliers must agree on a standard for data compression to keep transmission costs down. Sending a full moving film over a communications line demands very high bandwidth.

Manufacturers are working on ways of sending only the parts of the picture which change significantly; for example when someone is demonstrating something or working at a blackboard.

Hoyle and others in the business said the use of teleconferencing in Europe was very small. Dr Barry Stapley, head of the UK research and consultancy company Communications Studies and Planning, put the number of meetings held as teleconferences at a few thousand a year, most of them in the UK.

Like Hoyle, Stapley said the communications authorities' monopolies partly explained the slow take-off in Europe.

"The market is free in the US so small companies can design and sell systems," Stapley said.

"In addition, during the energy crisis President Carter personally campaigned for the use of the phone rather than the plane. And the US is a vast country, so the convenience factor is that much greater."

*Teleconferencing Product Introductions Proliferate – Interactive Audio/Graphics Workstations Have Arrived. Part of the Communications and Teleconferencing Strategy Program. $11,000 a year. Quantum Science, 16 Charles II Street, London SW1Y 4QU.

DEC is expected to stay well ahead of its "supermini" rivals.

DEC leads in the 32-bit race

by Kevan Pearson

DIGITAL Equipment Corp, Prime and Perkin-Elmer will be the winners in the high stakes 32-bit super minicomputer market.

US management consultancy Venture Development predicts annual compound growth of almost 32% in the "superminicomputer" sector. And it should come as no surprise that DEC is expected to stay well ahead of its rivals in the field.

"DEC is really dominating the market," says Tim McMahon, computer industry analyst at Venture Development, "and there is no competition.

"The interesting fight is for second place, between Prime and Perkin-Elmer. Prime overtook Perkin-Elmer in the first quarter of 1982, even though Perkin-Elmer was the first company to launch a 32-bit mini, back in 1975.

"Data General has a long way to go to catch up. It came to the market very substantially late," he adds.

This overall picture is somewhat misleading as Hewlett-Packard, the second largest manufacturer of minicomputers, did not launch its first full 32-bit system until Compec 82, in November. It is expected to launch a full 32-bit version of its popular 3000 series minicomputer this year.

Data General, third in the overall picture, did not launch its MV8000 until 1980, and did not add a second machine to the range until 1982. Now it has added an entry level MV4000. It is expected to add a new top-end machine in the first quarter of 1983.

Prime's position, according to the report, is due to its early dedication to the 32-bit market. The company's entire range, from the 150 to the 850, are 32-bit systems.

The other important factor is Prime's early concentration on the commercial and business markets.

The major markets for superminis have been real time analysis, time sharing and scientific computing. The report states that mainframes are not price competitive for many of these applications.

One of the major factors governing the growth of the market will be the widespread use of superminis in applications previously dominated by mainframes, particularly in the commercial and general purpose areas.

Other factors, according to Venture Development, will be the emergence of new entrants to the market, and a wider range of systems from existing contenders.

Switch to Honeywell

by John Riley

THE nerve centre for university admission allocations is starting a switch from a Sperry-Univac to a Honeywell system in March.

The Cheltenham-based Universities Central Council on Admissions (UCCA), has signed a £500,000 deal for a DPS 8/44C mainframe and peripherals to replace the Univac 90/60 it bought in 1978. The changeover is due to UCCA's development of extended online capability, not from dissatisfaction with Sperry-Univac.

"We are sad to move away from Univac," said UCCA head of computing services Ken Horsburgh. "We have had no complaints about their service since 1966". He explained: "The main attraction is the CP-6 operating system".

Baric on the look-out for regional partners

by George Black

BARIC, the computing services company owned by ICL and Barclays Bank, is looking for regional partners to support its newly centralised operation, and a number of new agreements could soon be reached.

Marketing services manager David Paynter said: "Over the last 18 months our processing has been centralised on Feltham away from local sites. But we don't want to leave our customers unsupported, so we are actively looking at the situation round the country to back up our services."

First of these new deals has been with South Shields-based Ford Computing (North-east), the two year-old £500,000 subsidiary of Ford & Co, the defence industry parts manufacturer.

A joint trading agreement was signed late last year for Ford to support Baric's range of business management systems.

Paynter said: "Ford should be able to support our small business systems in the North-east better than we have been able to ourselves."

And David Luke, a Baric executive working with Ford in the North-east, confirmed that the joint venture had already brought two big contracts, one in the public and one in the private sector.

Standard seekers home in on ISO Network Layer

by Donald Kennett

EFFORTS to define standards that will ease the problem of communicating across more than one network are currently being concentrated on the Network Layer of the International Standards Organisation's seven-layer Open Systems Interconnection (OSI) model.

ISO Network Layer working group convenor Jeremy Tucker told a conference in London that, while the neighbouring layers were covered by proposals which were well on the way to being approved as standards, details of the Network Layer were still being discussed at the technical working group level.

The conference, organised by Oyez and the Department of Industry, was the first international conference devoted wholly to OSI.

In the technical discussions Tucker said there were conflicts between the telecommunications authorities, which wanted many options in the Network Layer so that users could make efficient use of public networks, and computer manufacturers, which wanted protocols that could be implemented simply and economically.

ISO wanted to provide a simple overall scheme for users, he added, and although both carriers and manufacturers wanted to make their services economical for users, few users were actually involved in the discussions. It was unusual to see so few users involved in an ISO discussion, he said.

Contentious requirements include provisions for interrupts and for connectionless operation. Operators of circuit switched networks see no need for either, whereas for local area networks such as Ethernet connectionless operation is the normal mode – the sender doesn't wait to set up an exclusive connection to the receiver before transmitting a message; it just launches the message on to the network knowing that the receiver will get it if everything is functioning normally.

A packet switched network can use interrupt packets to break a deadlock or to stop a long transmission before it is finished and it can use either connectionless (for datagrams or broadcasts) or connection-oriented operation (for long transfers or two-way exchanges).

There has also been some heated discussion about what error detection and recovery facilities should be included in the Network Layer, since one opinion says that to provide them would be an unnecessary duplication of the facilities in the Transport Layer (the next layer up) and the other says that to leave them out would be to waste the facilities provided in the HDLC protocol used in packet networks.

SALES BRIEFS

Sperry lands airlines deal worth $12m

SPERRY Univac has won big orders totalling about $12 million from three airlines. The biggest order, worth $6.5 million is from Iberia Airlines of Spain for a Sperry Univac 1100/82, for real time control of spare parts. The other orders are from Indian Airlines and Ozark Airlines of the US.

Ozak is to take 250 specially designed terminals for its reservation system. These terminals, modified versions of Sperry's UTS 20 PARS, allow a split screen display with a "scratch pad" working area.

Boost for Harris

A $40 million order from the US Navy has made a bright start to the New Year for the ailing minicomputer giant Harris. The order includes Harris super-minicomputers for the automation of administration on board 450 of the Navy's smaller ships.

Floating data

THORN EMI has won a £2 million order for oceanic data capture equipment from the UK Offshore Operators Association. The order is part of a four-year programme supported by the Department of Energy, and includes two floating data capture buoys to gather information aimed at making future offshore structures safer.

High flyer

SWEDISH telecommunications equipment manufacturer Thorn Ericsson has won a multi-million pound contract from the Civil Aviation Authority for an advanced telephone system. It will be installed at the London Air Traffic Control Centre in West Drayton, Middlesex, where it will control most air traffic after 1987.

That'll do nicely

AMERICAN Express has ordered three fast Trace I document readers worth £2 million from Recognition Equipment based in Slough. The readers will be installed at Amex's Brighton European headquarters and are in addition to 15 already delivered in the US and Canada for the company's North American business.

Powerful

MODCOMP has been chosen to build a $2 million computer system to control pumping of water in a large hydro-electric power station in the eastern US. The station is being built by the Virginia Electric and Power Company and will deliver a continuous 2,100 Mwatts.

Pie system

PORK pie maker George Adams has ordered a £50,000 commercial management system from Geest Computer Services, offshoot of the Geest group, known for its bananas. The order includes sales ledger, purchase ledger, nominal ledger and payroll for use in the Spalding factory where the prize-winning pies are made.

Driving the minis

SYSTIME of Leeds has ordered £500,000 worth of magnetic tape drives for its minicomputer systems from Thorn EMI Datatech. The drives will be packaged as the Systape II unit and offered as the standard tape transport with the Systime Series 5000, 6400, 8730 and 8780 computers.

CAP for ICI

CAP Northern has won a contract from ICI to design, develop and implement a system to give information on the packaging of chemical products. The system will link Incoterm remote data entry terminals with ICI's central Burroughs B7800 mainframe at the Alderley Edge headquarters of the Pharmaceuticals Division.

BUTCHER . . . Biggest task is to change the attitude of senior management.

Tax advantages for IBM lessees

by Kevan Pearson

IBM is giving major tax advantages to its rental customers with the right to buy rental equipment – but the company will not lose out. It hopes to gain other financial benefits by the move.

IBM will accrue major cash flow and other financial advantages from allowing customers who rent IBM machines to buy them as a right.

The major advantage is that IBM will not have to finance the rental deals. Under a rental contract a machine remains IBM's property and the cash flow generated by the use of the machine will be spread over either two or four years, the term of the rental.

By allowing users to buy machines after they have been installed for one month, instead of the previous 18 months, IBM hopes to improve its cash inflow in any financial year. It will also reduce the level of non-productive assets in its balance sheet and therefore improve its rate of return on assets.

Against this must be set the loss of tax allowances resulting from giving customers the right of purchase in the rental contract. A spokesman for Inland Revenue confirmed that a right to purchase in a rental or leasing contract means that tax allowances will accrue to the users rather than the leasing or rental company.

Hence IBM has decided to take all new rental business inside IBM UK where, presumably, capital allowances from its normal investment and manufacturing programmes will help to offset the increased tax liabilities from the extended Sale of Installed policy.

Previously rental business was handled by IBM UK Rentals, which Inland Revenue treated as a leasing operation and taxed it accordingly. IBM UK Rentals was allowed to convert a certain percentage of its rentals into sales in a given year without attracting normal tax.

But when this limit is breached, as almost happened in 1982, the company's tax bill would increase dramatically. The consequence of this was that IBM suspended its Sale of Installed policy in June 1982.

IBM will continue to operate IBM UK Rentals as a rental operation. It will handle its existing business and any repeat business from existing clients. All new business will go through the main UK company, bringing IBM UK into line with the rest of the world.

IBM UK Rentals will, therefore continue to handle most of IBM's rental business in the immediate future. UK Rental's clients have the same SoI rights as rental customers of IBM UK.

A spokesman for the company said that IBM did not extend purchase rights before because SoI business had not seriously breached the limits imposed by the Inland Revenue until mid-1982.

Marathon case comes to court

by George Black

THE marathon legal struggle involving Computer Sciences Corporation and the US Justice Department is at last approaching resolution. The case is due for hearing by a court in Virginia this spring.

The action arises out of a Justice Department inquiry into the workings of the federal procurement agency, the General Services Administration, between 1972 and 1977. CSC's remote computing service Infonet was under contract to the GSA in that time.

The inquiry was set up to report on allegations of corruption within the procurement agency. It led to several charges against CSC and its employees, but the indictment was thrown out by the District Court of Alexandria, Virginia, in 1981.

The Justice Department appealed and in June 1982 part of the indictment was reinstated. CSC took the case higher still, but the Supreme Court refused to hear it. So now it will finally be heard back where it began.

Computer firms take up 'good design' offer

by Andrew Thomas

COMPUTER companies are among the first UK firms to take advantage of a new scheme aimed at improving the design of British products. The Department of Industry has committed £3 million to provide design consultancy services to UK companies, and a further £500,000 has been set aside for a campaign aimed at increasing management awareness of the need for good design.

The DoI is working with the Design Council in offering companies with between 60 and 1,000 employees 15 days of full design consultancy free of charge, and a further 15 days at half price. Since its June launch, over 200 companies have applied for assistance and 170 of these have had their applications accepted to date. According to the Design Council, 5 to 10% of these are computer companies, although the council refused to give any names.

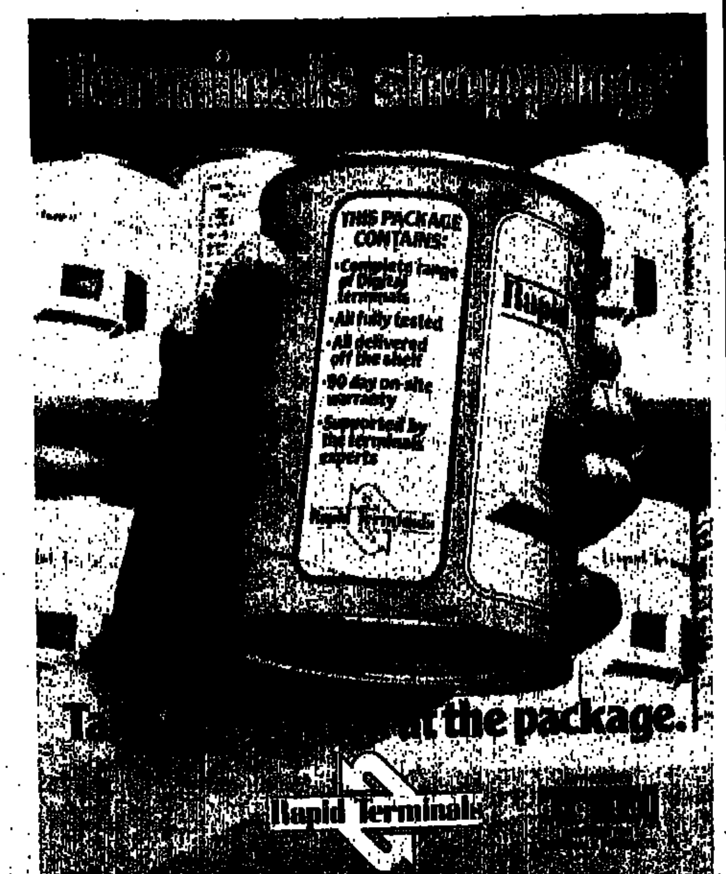
John Butcher, Parliamentary Under Secretary of State for Industry, maintains that not enough attention is paid to good design at an early stage in product development.

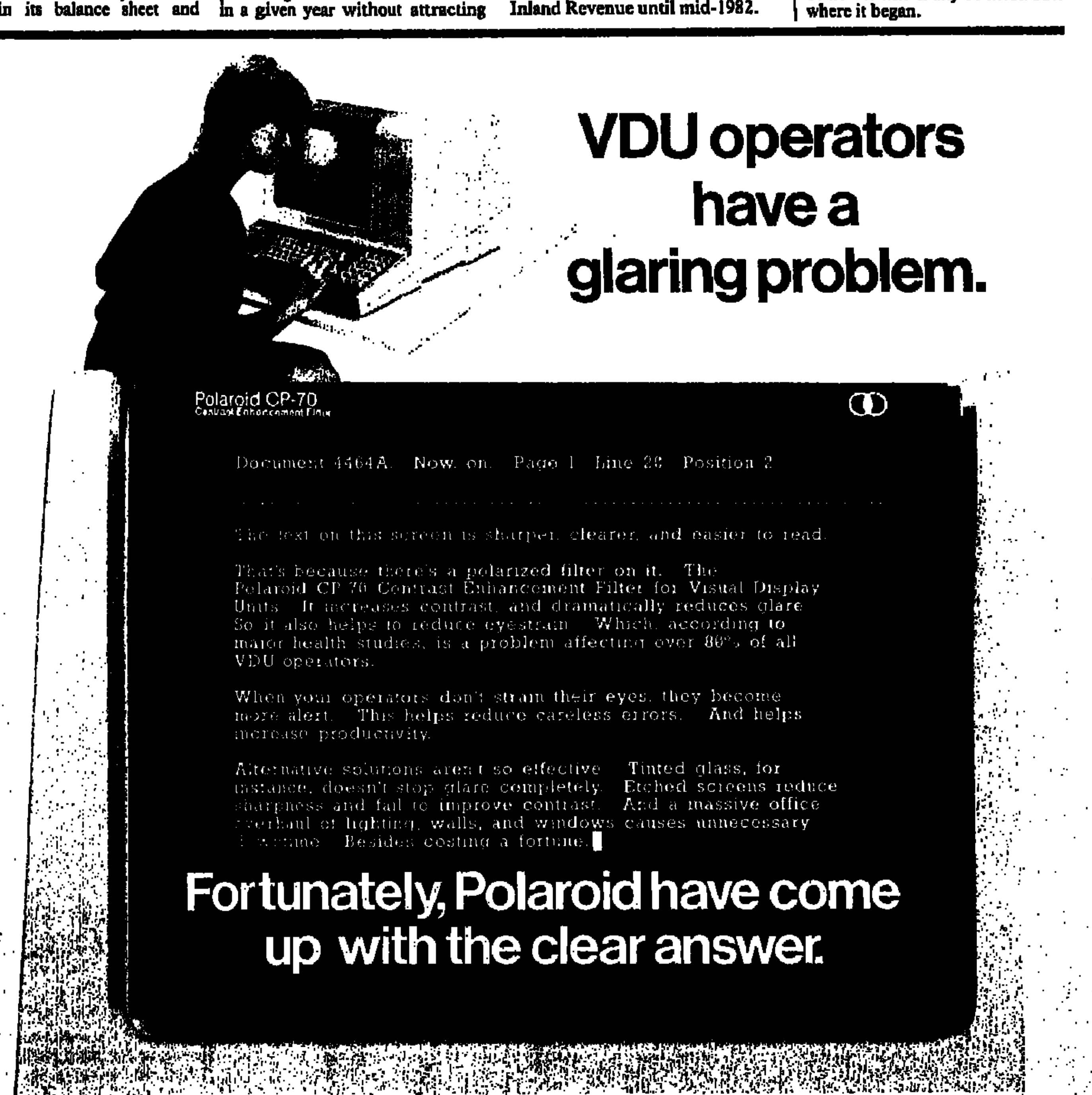
"The biggest task before us is to change the attitude of senior managers in industry," says Butcher, "particularly those with the purse strings in their hands.

"Design is where Britain has fallen down in attacking overseas markets," he continued. "It should be seen as a total concept, rather than being treated as an afterthought."

Design Council chief Sir William Barlow sees the campaign as coming at the right time: "After two years of recession, we are giving small and medium-sized businesses the help they need to fight their way out of that recession by paying more attention to design."

The awareness campaign, Design for Profit, involves nationwide advertising and a series of 12 seminars around the country where leading designers and manufacturers will give presentations on the need for good design.





Each year the number of people using Visual Display Units increases.

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Computer call-up for the French?

by Jack Gee

JEAN-JACQUES Servan-Schreiber, the French writer and publicist who heads the State-sponsored World Microcomputer Centre, is urging that young Frenchmen, who must serve a 12-month stint as conscripts in the armed forces, should be given the choice of the same period of "National Computer Service".

Servan-Schreiber has told President Mitterrand that, as an alternative to square-bashing, school-leavers should be given a training period in computer technology and then make their experience available in factories, offices and educational establishments.

Servan-Schreiber, who has hired international computer experts including Massachusetts Institute of Technology's Nicolas Negroponte and Seymour Papert, bases his proposal for National Computer Service on a recent experiment monitored by the World Microcomputer Centre at a school in Brittany.

Bernard Tual, a 33-year-old teacher, has just spent an entire year teaching young Bretons at Vieux Marche, a village of only 1,400 inhabitants, to read, write and count.

Tual instructed 26 pupils during two sessions per week. All made astonishing progress which was recorded by the computer with marks automatically awarded according to their performance.

Ten-year-old children in Tual's computer class now read better than their parents thanks to a "customised" program which modifies the speed of instruction according to the ability of each child.

The teacher reports that it takes less than one hour for each pupil to learn to use the computer. Other schools in Brittany are now being equipped for computer-taught reading.

The World Microcomputer Centre did not fund Tual's venture. He raised the FFr21,000 (£2,000) needed to install his computer thanks to FFr15,000 (£1,400) given by two Loval building firms. He put up the rest out of his own pocket.

The Microcomputer Centre is now involved in a major project, which will cost FFr billion (£500 million) over the next five years, to bring micros along with telephones and television into French households by cable. The venture is being conducted in partnership with France's Telecommunications Authority.

SERVAN-SCHREIBER . . . Conscripts should have the choice of "National Computer Service".

MSA chie to deliver NCC key speech

by George Black

SOFTWARE will be the subject of the keynote speech at California's National Computer Conference in May for the first time. And its chairman John Imlay, who will make the speech, says the industry is moving so fast that he may have to change the text at the last minute.

"There isn't any point in starting to write it now," he said. "The situation will probably be completely different in six months." Previous keynote addresses have been made by heavyweights on the hardware side of the business.

"Mine is going to mark a dramatic change," said Imlay. "It will be people-related."

The conference, on the theme of The Emerging Information Age: Computers, Communications and People, is to be held at the Anaheim and Disneyland Convention Centres, and is expected to attract up to 100,000 people.

"I'm really excited about being invited," said Imlay, "as I am about everything else in this business. Things are changing so rapidly that soon robots will replace pets."

He became chief executive of Management Science America in 1970 and has steered it towards its present $73 million turnover.

IMLAY . . . Promises to talk about people — "a dramatic change".

Hi-tech job losses hit women most

by John Riley

JOB loss is being caused by the introduction of new technology and women are disproportionately affected, according to a survey* of 40 companies in West Yorkshire published this month.

The massive redundancies expected with the advent of new technology are not happening. Ursula Huws, the author of the report, claims that this is because a high proportion of easily automatable jobs (in routine clerical positions, in factories and back-room jobs in sales) are carried out by women.

Because women workers leave more often than men, employers rely on natural wastage, which disguises the job loss.

In addition, Huws found that companies that do automate take a larger share of the market, and cause other companies to collapse, thus causing indirect job losses.

Jobs that are created are in the scientific and technical areas and tend to go to men: there was little evidence of women being retrained in these skills.

*New technology and women's employment: Case Studies from West Yorkshire. Free from Equal Opportunities Commission, Publicity Section, Overseas House, Quay Street, Manchester M3 3HN.

UK bargain basement for IBM machines

by Kevan Pearson

THE UK could soon become IBM's European bargain basement because of the slump in the pound and the end of price restrictions in Belgium.

Belgium previously had the lowest IBM prices in Europe because of a price freeze. Belgian prices were about 82% of IBM UK's list, on average. This led to the Belgian market being the busiest in Europe, despite the relatively small user base, as leasing companies diverted orders from the UK to Belgium.

However, the country's price freeze ended on January 1 and prices in Belgium are now slightly higher than in the UK — which does not please the leasing industry, according to John Fuller, a director of independent lessor PCML. The position has been exacerbated by the fall of sterling to the extent that some European leasing outfits could end diverting orders to the UK, rather than from it, unless the pound rallies, or IBM takes some action to prevent diversions, or makes them unattractive.

IBM order diversions work on the basis that an order placed with IBM (UK), for example, is fulfilled by a machine allocated to another country such as Belgium. The computer will be delivered on the date scheduled for delivery by IBM UK, but at IBM Belgium's price. This meant that substantial savings could be made, a factor heavily exploited by the leasing companies.

In 1982 IBM faced serious problems because of the price restrictions in places like Luxembourg, Italy and France, where total price freezes were in force. The result of this was that IBM banned order diversions to countries where price restriction was in operation.

£20,000 for retraining

by John Riley

MANPOWER Services Commission is making £20,000 available to computer companies to offset costs for advanced retraining courses.

The cash is being administered through the Computing Services Industry Training Council (Cosit) and the grant aid is £100 a week up to a total of eight weeks for each company — and there are no strings attached.

Gordon Ewan, Cosit training executive, commented, "This marks a change in posture by the MSC away from entry level training, to training people who are already employed. It is hoped this will develop skills even though it will not always lead to another person being taken on.

"The cash is available for a wide range of subjects, including business management training."

Cosit (01-242 5049) welcomes enquiries about the scheme.

Micro big guns

■ From front page

on the display screen) to close the gap between the user with a problem and the computer solution.

It will be available here in July or August, says UK managing director Peter Cobb, and will cost the equivalent of $12,000. For this the buyer gets the main unit with mouse, keyboard and high resolution black and white monitor and twin floppy drives built in, with a printer and a five Mbyte Profile hard disc unit.

Along with the standard configuration comes some two Mbytes of software — hence the one Mbyte of RAM and the five Mbytes of disc storage. The software includes applications like word processing, graphics and file management embedded in the operating system and works through "pieces of paper" taken out of "folders". These are represented graphically on the screen and moved around by the mouse.

Apple's Lisa will offer links to mainframes using 3270 protocols, and Lisa-to-Lisa communications via AppleNet and Ethernet.

Apple is not abandoning its earlier products. It has launched a revised Apple II, the Apple IIe, with 64K RAM as standard and extra options to extend this to 128K and 80 column display. Around 98% of Apple II software will run on the new machine. It has also brought out a pair of printers and announced new 5¼" Mbyte floppy drives as peripherals for the Apple III.

SOFTWARE FILE

Fuzzy sets take over coding

by George Black

FUZZY sets are about to transform programming. A tool for building expert systems which is linked to decision support software has just reached Britain from the US. Its author, Londoner Peter Jones, says the tool, named Reveal, is far more powerful than acclaimed high-level languages like Lisp and Prolog. It takes advantage of a modern branch of mathematics known as fuzzy sets theory, by which programmers give flexible definitions to their vocabulary.

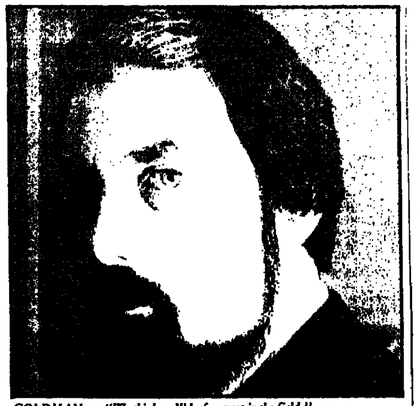
Jones, ten years a planning consultant with Online Decisions, said, "Propositions are not always either true or false and programming now recognises this. The law of the excluded middle has been thrown out."

An example is interpreting academic results for career guidance. The programmer lays down a "policy" by which certain ranges of skill are appropriate to a profession. He can assign rough and sometimes overlapping meanings to terms like "good", "average" and "poor". Thus the system can assess probabilities.

The theory was originated by Lotfi Zadeh, professor of computer science at Berkeley University, California, in a paper published in 1965. American academics have pursued the theory, but Jones said that US businesses had proved less keen to take up the idea than their UK counterparts.

He wrote Reveal three years ago and has been promoting it in the US for 18 months.

This week it is launched in the UK by the American-based bureau Tymshare, which plans to distribute it as an IBM time sharing facility and by licence. There are now about 50 US users and two orders from large British corporations are in the offing. Reveal must compete with SPL's Sage as well as other products expected on the market soon. But Tymshare's Jerry Goldman said, "We think we shall be foremost in the field."



GOLDMAN . . . "We think we'll be foremost in the field."

Finance plan system adapted for desk-top use

A FINANCIAL planning system which is widely used on a range of mainframes has now been converted for use on desk-top micros. Called Micro FCS, it has been adapted from the FCS-EPS system by the design EPS Consultants.

BP subsidiary Scicon has made FCS-EPS available as a bureau facility and some 500 companies have taken it on. Now FCS can be had on Unix, CP/M and CP/M-86 operating systems. And it will be accessible on many different micros including Apple, Altos, Superbrain, NEC, HP 125, Sirius, Superbrain, Zilog, Rair, Wang, Onyx and the IBM and ICL personal computers.

Scicon intends to offer a complete solution matching FCS to the Northstar Advantage machine, as well as offering a bureau service for Micro FCS users.

Scicon's John Smith said the idea was that a mainframe could be used for heavy number-crunching jobs that would be prohibitively long to do on a micro.

German copyright ruling

AN important precedent on software copyrights has been set in West Germany. Munich District Court found that two West German companies had violated copyright laws by copying the Visicalc program on floppy discs without the authorisation of the American owners Visicorp.

Basis Software and Basis Microcomputer were found to be liable for damages, as yet unassessed, for having copied and distributed the software. The decision is the first of its kind in that country. The West German companies had translated the program themselves.

The court also ordered one of the defendants, which had wrongfully registered the Visicalc trademark as its own with the German patent office, to allow the registration to be cancelled.

The defendants have been ordered to reveal the identity of their customers for assessment of the damages. They have until the end of January to appeal.

Ann and Tom McKaskill . . . Developed Command on Pioneer.

Pioneer package for PDP-11 and Vax

by George Black

A NEW accounting, distribution and production management package is to be introduced next month for the DEC PDP-11 minicomputer, and by the summer it will be ready for the Vax.

It comes from the Northampton-based software house Pioneer Computer Systems and is called Command. The authors were Australians Tom and Ann McKaskill, who founded Pioneer in 1978.

Command is based on the Pioneer User-11 development system, which has been in use on DEC hardware for four years. Already 18 British firms have decided to adopt the new package. It has been written in Northampton over the past year and nine installations have been made by the sister company in New Zealand.

Now it is to be taken on by New Zealand's biggest computer services company, the £8 million revenue CBL Holdings, which is also a large DEC OEM. CBL, which has provided a DEC time sharing service since 1977, now has 25 PDP-11/70s and two Vax-11/780s.

Pioneer's income is still only £500,000 a year, but the deal is expected to earn some £400,000 for CBL and £40,000 for Pioneer. A dealer network is being built up, which already includes Rolfe and Nolan in the City, and Magabyte in Leeds.

CBL chief executive Bernard Batteresby emphasised that services companies now needed to specialise in applications for particular industries if they were to meet the growing competition of the micro.

Tom McKaskill said the merit of Command was its nine-modular structure, making it easy to change, for instance, programs for different tax laws. They hoped to put in between 60 and 80 turnkey versions in the next year.

Programs over the air

by Andrew Thomas

THE BBC will be giving away software later this year when its new Teletsoftware service hits the airwaves.

Last week saw the first public demonstration of the new service, due for inauguration in March after five years of development.

Telesoftware involves the broadcasting of computer programs via the BBC Teletext service, Ceefax. Although the software can be viewed on any suitably-equipped television and keyed in to a microcomputer by hand, users of the BBC micro will soon have a chance to interface their machines direct to Ceefax for downline loading.

The bulk of the software will be provided by the general public, and programs have been submitted from as far afield as Melbourne Grammar School in Australia, but the BBC is to accept responsibility for its performance.

When the service goes live, it is expected that 500 programs will be available, a considerable number being intended for use in schools. Nearly 50 primary schools are already equipped to receive the programs, and the BBC has had over 1,000 advance orders for the adaptor, which is priced around £200. An additional benefit resulting from the use of the adaptor is that it converts any television into a Teletext receiver.

LOCAL

adj. belonging to a specified place

AREA

n. defined space for particular use

NETWORK

n. a chain of interconnected people or operations

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For queries regarding content/administration, contact Nigel Tout or Trish Wright at ICL Forum, Bridge House, Reading, Berks RH1 8PN. Tel: 0734-581258.

ICL

MICRO NEWS

Bus system the key to latest British micro

LAST week's launch of the Microframe microcomputer from Tycom, a newcomer to the British micro-making fraternity, was accompanied by a lavish scattering of gimmick terms like "the first of the fourth generation" and "future proof" computing. But how new is the concept behind the machine, and how secure its future?

Bus-based micros are not new. Closely-linked systems of multiple processors and shared peripherals are not new. Even the marketing ploy of a system to last into the 1990s is not new.

The heart of Tycom's system is its versatile base bus connect, or VBC. The company has redesigned bus hardware to fit its ideas of what the software interaction of different parts of the system should be, says R&D director Emrys Williams. It used high level protocols to make interfaces to the bus easy to implement.

"We looked at the VME bus and Multibus, but we didn't really like them," he says. "There were too many things we wanted to do differently." The bus system can have six, 12 or 22 slots, depending on the hardware configuration chosen, and uses standard single or double Eurocards.

An 8 MHz 8088 processor, running the VRTX real time executive, controls the bus. It can be dedicated to looking after the I/O and communications, or can be used to run application programs under CP/M-86 or MS-DOS.

So far processor boards using the Z80, 8088 and 68000 microprocessors have been developed, along with various peripheral boards. Most have been designed by Tycom's own R&D arm – which used to be Mapcon consultant Jeaborought until taken into Tycom – but two boards were put out to subcontractors.

The Z80 and serial communications boards were designed outside, partly to ease capacity problems within Tycom, partly to test out the bus specification and documentation, says Williams.

It is Tycom's hope that, once the machine has become established, third parties will develop boards to put into the system. "We plan to make information about our VBC system widely available, and are protecting it with patents," says Allen Timpany, Tycom managing director.

But the architecture of Tycom's machine, despite the company's marketing claims, does not represent a fundamental change.

"If that is a fourth generation machine, we have been making one since 1981," says Cifer Systems marketing services manager Peter Readman. Cifer uses the IEEE 488 bus, both as its Series 1's internal and external bus, and like Tycom reckons it is easy for users to tie on other processors and software.

So far Cifer has stuck to Z80s, which it scatters liberally around the system, giving boards local intelligence. But a 68000 processor board, carrying 256K of RAM as well as the 16-bit processor, is under development, says Readman.

Another earlier entrant into the market with a closely-coupled set of processors – a local area network in a box – was Shelton Instruments. "This is precisely how SigNet was put together two years ago," says managing director Chris Shelton. He, like Timpany and Readman, proclaims a processor-independent bus, and is soon to bring out 8088 satellites to attach to the system. So far only Z80s are used.

Plessey has its System 19, also sold as the Logitek Landmark – "a landmark in computer design" Logitek claimed in November, "a system to last till the 1990s!" – which can run up to 20 users on a Multibus system. Each user has a Z80 processor and shares central storage and peripherals. 8086 boards are under development.

And there are others too.

What Tycom has done is not new. But it has taken more of the complexity out of building up systems with a variety of processor types and operating systems. If the price is right, and if all-capable magic boxes are what users want, it could have a winner.

READMAN . . . Bridging the generation gap.

MICRO NEWS

Sony closer to 3½-inch disc standard

THE band of brothers lined up behind Sony's 3½-inch microfloppy drive has settled its differences, giving extra strength to its claim to the standards crown. Sony and 12 other leading floppy industry companies have agreed to support a mutually compatible 3½-inch format, healing the rift that opened up over the disc media.

"The major technological issues relating to compatibility have been settled," says Robin Allison, Sony UK marketing manager for the drive. Sony thinks the compatibility will strengthen the position of the 3½-inch disc as the leading format for a microfloppy industry, as well as reduce costs and expand the potential market through greater second sourcing opportunities.

The 13 companies supporting the agreed format are: Atari, Athena, BASF, Fuji Photo Film Company, Memorex, Media Systems Technology, Shugart Associates, Sony, TDK, 3M, Verbatim, Wabash Datatech and Xidex. The media will hold one Mbyte, in a double-sided 135 track per inch version.

With such support from the disc drive and media manufacturers, bolstered by Tandon's recent announcement of a compatible drive, Sony reckons the industry is seeing the emergence of a de facto standard.

The competition for this position does not have so many big guns behind it. The main rivals are the 3½-inch drive from the Dysan/Tabor/Seagate stable and the Hitachi/Matsushita/Maxwell three-inch unit, with added support from Micro Peripherals.

Another offering, from Cannon, goes with a 3.8-inch drive format, while IBM – the constant threat to any de facto standard – is said to be seeking manufacturers for its 3.9-inch unit.

The rewards to be reaped by the winner of this battle are great.

ALLISON . . . "Major technological issues have been settled."

Fake micro trade rejected by UK dealers

THE growth business of faking Apple microcomputers is not catching on in this country. Two companies with Apple imitations here are negotiating with Apple UK, and look as if they will stop trading the fake Apples here.

"We have the means at our disposal to take all action necessary to stop abuse quickly and easily," says Apple UK managing director Peter Cobb.

Letters have been passing between the parties, and Cobb thinks things will soon be settled without having to go to court.

Meanwhile in the Far East, hot-bed of the Apple rip-off business, writs have been filed against 19 shops trading in Apple look-alikes in Hong Kong.

Charges are of infringing copyright on the operating system software.

Apple suggests that one reason why the business has not taken off in the UK is that dealers here have a hard enough job to decide which of the myriad legitimate machines they stock, without worrying about legal problems.

Ethernet link for Apples

PERSONAL computer leader Apple is to tie together its micros through Ethernet. Apple has signed up Californian supplier of Ethernet interfaces 3Com to provide prototype hardware to Apple this month, ready for inclusion in Apple products later in the year.

Low cost network products for Apples are already available from companies like Zynar and Corvus, and the appearance of Ethernet products bearing the Apple label is bound to affect their share of the market.

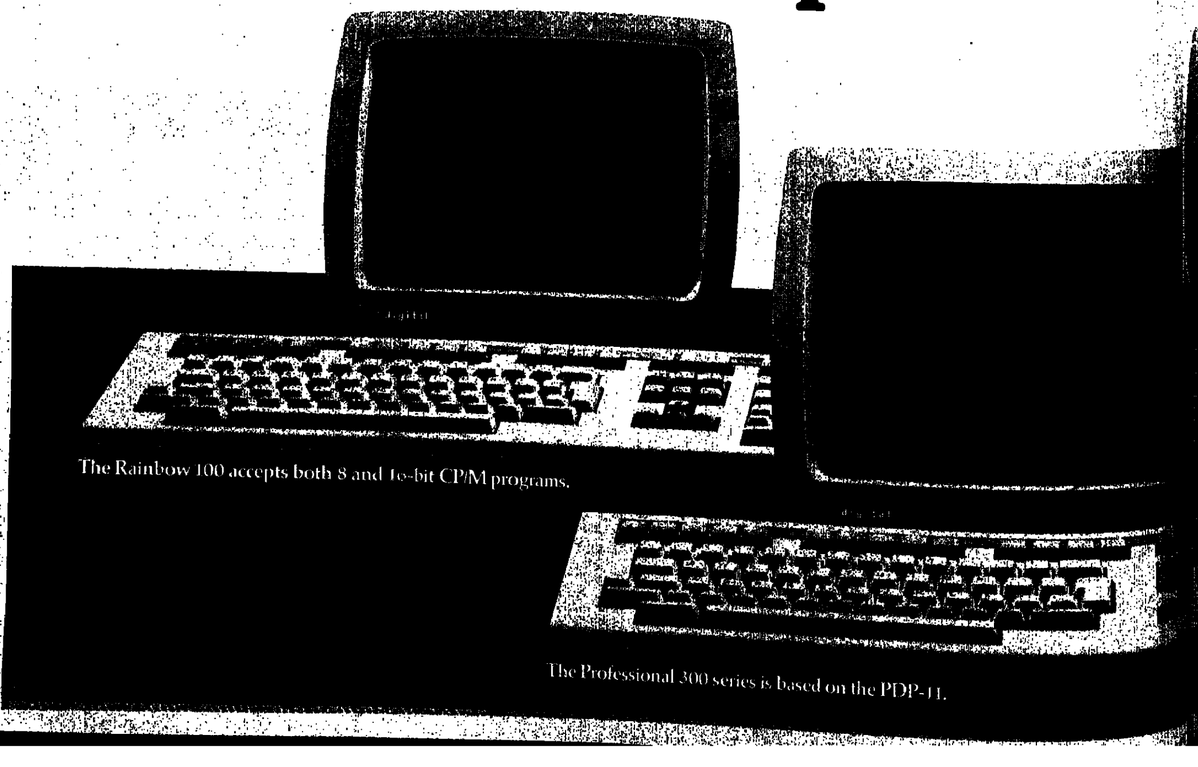
But both Zynar and Corvus cater to a growing range of machines, and allow mixed networks.

3Com was founded in mid-1979 by early Ethernet worker Bob Metcalfe, and has developed hardware and software Ethernet products for DEC equipment.

It recently started shipping its EtherSeries products, which incorporate VLSI custom chips built by Seeq Technology, to give low cost direct Ethernet connections for personal computers like the Apples.

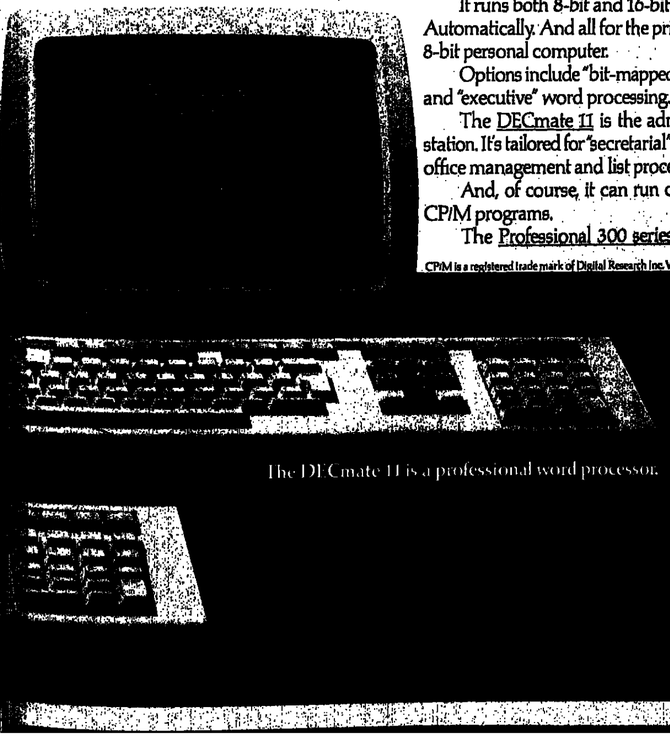
Micro News is compiled by Robert Parry

Is Digital about to set the standard in personal computers too



The Rainbow 100 accepts both 8 and 16-bit CP/M programs.

The Professional 300 series is based on the PDP-11.



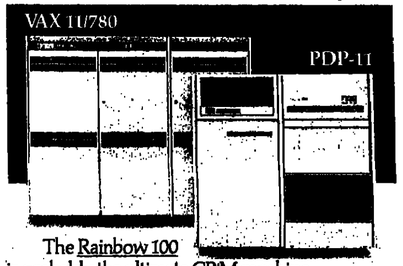
The DECmate II is a professional word processor.

Since 1971 Digital's PDP-11s have been synonymous with 16-bit computing.

And for the last four years the VAX 11/780 has been regarded by the computer industry worldwide as the yardstick in 32-bit computing.

Now Digital have created a series of three personal computers for professional applications. Powerful, yet easy to use. Designed without compromise.

Consider a few of the standard features that set them apart.



The Rainbow 100 is probably the ultimate CP/M machine.

It runs both 8-bit and 16-bit CP/M programs. Automatically. And all for the price of an ordinary 8-bit personal computer.

Options include "bit-mapped" colour graphics and "executive" word processing.

The DECmate II is the administrative work station. It's tailored for "secretarial" word processing, office management and list processing.

And, of course, it can run conventional CP/M programs.

The Professional 300 series is the multi-purpose work station that's based on one of the world's most popular minicomputers, the PDP-11.

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COMPANY NEWS

Computer stock beats the gloom

COMPUTER shares on both sides of the Atlantic have continued their upward movement, despite the sterling crisis and other gloomy international news.

ICL, even with a huge cash call hanging over it, closed the week at 67p. The cash call for £103 million elicited what ICL's bankers described as a very satisfactory response. Although all the acceptances had not been calculated at the close of business, Warburg's bank felt that most of the shareholders must have taken up their new shares at 60p each.

Dealings in the rights to buy the shares closed at 5.5p. This means that sophisticated dealers in shares thought that they would make a profit by buying the "rights" (not the shares themselves). By Friday of last week they had made 1.5p on each "right" purchased when the market was paying 67p for ICL shares.

Although some analysts were critical of the way the rights issue was handled, the general opinion in the City was that Sir Christophor Laidlaw had taken proper advantage of the new-born confidence in ICL.

Certainly a smaller rights issue, say £50 million as some analysts wanted, would simply have meant that ICL would be back sooner rather than later to finish the job. Most City commentators are forecasting a share for ICL of between £1.20 and £1.50 before the end of 1983.

Elsewhere both BCL and NMW have shown rapid gains. Brokers say that the 27p rise in NMW in recent weeks is due to a tightening in the market for shares in the company, now that most of those who wished to sell at the time of the public listing of the shares in December have completed their disposals.

An additional factor noted by some analysts is a growing awareness by brokers that the high volume of transactions on the Stock Exchange will translate fairly directly into profits for NMW.

The company offers a bureau service to stockbrokers, and charges a fee for each sale of shares handled through its giant ICL 2970s at Nantwich. The company claims to handle 38% of all share business transacted on the Stock Exchange, and recent turnover in shares has nearly doubled on levels of a year ago.

Anticipated new product launches and a high level of sales at Business Computers (Systems) are cited as some of the reasons for the steady climb from 62p to 85p.

Managing director Mike Munnelly says that the company is now installing its Molecular 18 mini at the rate of five to eight a month, nearly double last year's rate of installation.

MUNNELLY . . . Installing between five and eight Molecular 18 minis a month.

Munnelly also noted that the company had installed 20 of the machines in December, traditionally a quiet month.

Other computer companies which have shown gains in the past few weeks are Birmingham based ACT, which has shot up by 20p to a new high of 263p, and Norsk Data, which is also at an all-time high of 1538p.

Most of the strength in ACT's price is attributed to the huge success the company has had with its Sirius Victor 16-bit computer. ACT now claims over 300 dealers for this low-cost machine which was designed by Chuck Peddle, originator of Commodore's Pet.

Norsk, which is based in Norway and is now the second biggest company in that country, has always been an astutely handled company in financial terms.

Shares in the company are listed on the Oslo, London and Stockholm exchanges, and the company is shortly to undertake a money-raising exercise in New York. In addition, senior staff from Norsk are in London this week for their regular briefing to City financiers.

■ Comment: The share success of 1983 in the US is undoubtedly IBM. The company's stock has travelled all the way from $56 to touch $100 in just over six months.

Some of the near-100% appreciation is undoubtedly due to the general recovery of the US main Stock Exchange in Wall Street, but most of the vigour arises directly from the company's steeply improving quarterly profit record in the second half of the year.

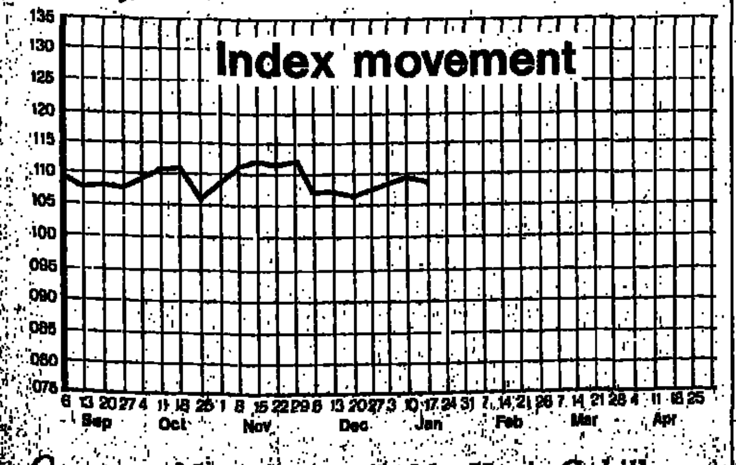
SHARES TABLE

The shares table, which is specially compiled for Computer Weekly, shows selected computer companies that reflect the state of the computer industry.

Date 14/1/83 Index 108.85 Change −8.88

Pence 1982/83 High	Pence 1982/83 Low	London Stock Exchange Stock	Pence Price	Pence C'nge	$ 1982/83 High	$ 1982/83 Low	US Stock	$ Price	$ C'nge
263	151	ACT (App Com) (25p)	253	−10	33	18	Amdahl	31¾	+ 1½
189	150	BOC Int. (25p)	177	− 3	32	11¼	Apple Inc	30¼	+ 1½
45	18	B. Bov Kent (25p)	45	+ 4	37¼	21	Auto Data Pro	37	− ¼
134	101	Chubb (20p)	134	+10	46¾	30½	Burroughs	46¾	+ 2½
176	48	Cole Group (25p)	150	−28	17	7¾	Comp Auto	14½	+ ¼
303	162	C.A.S.E. (20p)	162	−18	19½	11¼	Comp Sciences	17¼	− ⅜
730	445	De La Rue (25p)	670	+25	16½	8½	Comshare	11¼	+ ¼
360	238	Extel (25p)	285	+10	41½	22	Control Data	41½	+ 2⅜
494	312½	Ferranti (50p)	488	−15	44	21½	Cray Research	42	+ 2⅜
249	159½	GEC (25p)	203	−12	53¼	20⅜	Data General	43½	+ 2½
79	30	ICL (25p)	67	− 2	49½	11⅝	Datapoint	20	+ 1⅜
47	35	Kalamazoo (10p)	42	+ 1	34½	18⅜	Dataproducts	34½	–
330	223	Kode Int (25p)	282	− 3	107¾	62¼	Digital Equip	100¾	+ 2¼
315	215	Memec (10p)	278	–	49	18¾	Elec Data Sys	47¼	+ ¼
182	110	Muirhead (25p)	158	−22	6¾	3½	Gen Automation	6⅜	− ¼
473	218	N'market (1981) ($.05)	458	−15	40½	22	Harris	40½	+ 2¼
1538	570	Norsk Data	1538	+551	77¾	39¾	Hewlett-Packard	77¾	+ 2
470	220	Office & Elect (25p)	220	− 8	103¾	61½	Honeywell	93	+ 7
743	445	Philips Lamp (Fl 10)	743	+18	43½	20¾	Intel	43½	+ 3¼
642	346	Plessey (50p)	618	−10	98¼	57	IBM	98¼	+ ¾
57	20	Quest Auto (10p)	40	–	57⅞	30¼	Litton Ind	57¼	+ 2¾
607	353	Racal Elect (25p)	539	−55	16¼	6¾	MDS (Mohawk D)	16¼	+ 1
283	171	Rediffusion (25p)	230	−30	24	8	MSA (Mgmnt Sci)	24	+ 5
268	180	Star Comp (10p)	252	− 4	18¼	7¾	Mngmnt Assist	12½	+ ¼
468	380	Thorn-EMI (25p)	418	−25	12½	6¾	Modular	11¼	− ¾
145	74	UC&T (50p)	137	− 5	90	50¾	Motorola	90	+ 6½
					27	14	National Semi	27	+ ¾
		Unlisted Securities Market			91½	40½	NCR	91½	+ 4
					31¾	17¼	Perkin-Elmer	28½	− 1
					40¼	18¾	Prime	40¼	+ 2¼
90	62	Sus Comp (10p)	85	–	48½	29¾	Raytheon	45½	+ 1
205	75	Consult (C&P) (10p)	188	− 8	27¼	14	Signal	27¼	+ 2
194	158	Int'europe Tech (20p)	158	−10	34¼	21	Sperry Corp	34¼	+ ⅜
252	246	Jo Tech (25p)	247	–	34½	18½	Storage Tech	24¼	+ 2⅜
80	27	Knight (5p)	27	–	31¼	18¼	Tandem	26½	+ 1¾
250	200	Micro Bus (10p)	280	+45	59¾	23¼	Tandy	50½	–
158	112	Miles 33 (10p)	140	− 5	140¼	70¾	Texas Inst	137½	+ 4⅛
173	85	NMW (£1)	173	+ 5	27¼	12½	Tymshare	21¾	+ 3
126	43	Rolfe & Nolan (10p)	86	+ 5	32¾	12⅜	Wang Lab B	32¾	+ 1
120	75	ScanData (10p)	115	+ 5	12¼	7½	Wyly	10	− ⅛
105	60	Trident Comp (10p)	80	–					
112	75	Zygal Dyn (5p)	85	–					
170	150	Memory Comp [illegible]	170	+10					

The table shows the closing prices in London on Friday and in America on Thursday. The Share Index is based on the prices of the UK companies in the table. Highs and Lows have been adjusted where necessary.



Company News is compiled by Kevin Cahill.

DEC heads for 25% drop in profits say analysts

THE US financial community appears to have lost confidence in DEC's ability to match the record profits of last year. Key analysts are adjusting profit forecasts downwards, some by as much as 25%.

In 1981/82, DEC, for long one of the bluest of blue chip technology shares on the New York Exchange, returned profits of $417 million. This gave the company the appearance of being nearly recession proof and many of the analysts, whose forecasts have a direct bearing on the price of shares and on the ability of a company to raise money from the sale of shares, ended last year cautiously forecasting profits about 10% down for 1982/83.

The latest round of downward revisions was led by analyst Stephen McClellan of brokers Salomon Brothers, who forecast in the Wall Street Journal a $5.20 per share profit for 1982/83.

That would leave DEC's profits for the current year at around $286 to $300 million, more than 25% below last year's levels.

Peter Labe, a key analyst at brokers Smith Barney Harris Upham, is not so pessimistic. He reduced his forecast by about 10% to $350 million ($6.25 per share).

Salomons is one of the biggest broking houses on Wall Street, but McClellan's caution had little effect on the price of DEC shares, which fell only a few dollars.

Most industry commentators feel that the analysts are being influenced by the gloomy forecasts for the economy generally.

According to Al Mullin, DEC's vice-president for finance, "The company is still experiencing weaker demand than we would like to have seen, due principally to the depressed state of the world economy."

Exports up, but peripheral trade balance dips

by John Aczel

VOLUME growth in exports of British-built peripherals has improved recently. But the deficit between imported and exported units reached a negative imbalance of £200 million for the first nine months of the year.

The latest trade figures refer to September, and show that exports of peripheral products reached £40.4 million in that month. This compared with £31.4 million in August, while for the first nine months of the year the cumulative total has risen to over £310 million.

These sales were helped by the recent fall in sterling which has made British products more competitive in some overseas markets. In particular, exports to the EEC rose appreciably and reached a record figure of £24.4 million.

Major gains were seen in France, where sales amounted to £6.6 million in September, a growth of 8% compared to the previous month. Exports to West Germany jumped to £9 million, against £6.3 million in the previous month, while those to Italy continued on an upward trend and reached a peak of £4.4 million.

In terms of numbers, exports of peripherals were also rising, and 32,700 units were sold abroad in September as against 27,300 in the previous month. The average export price of a peripheral unit was firmer, at £1,235 against £1,150 in August.

Imports of peripherals were also higher and have increased their market share in recent months. Deliveries rose by 12% to £65.1 million in September, and for the January to September period imports leapt to a total of over £510 million.

The bulk of the increase in imports was due to higher deliveries by the United States. US sales rose by 14% to £38.2 million, and accounted for nearly 60% of total British imports.

In addition, imports from some of the European countries were higher, particularly from West Germany. Their deliveries went up to £4.7 million in September against £4.1 million in the previous month, while those from France also grew, totalling £8.6 million in September.

By number, imports remained relatively steady and amounted to 86,400 units. The price of these imports was quite cheap, averaging £750 per unit.

Despite the increase in exports, Britain's deficit continued to be significant. In September, imports exceeded exports by £24.7 million, against £26.9 million in August. For the first nine months of the year, the total gap reached a record figure of nearly £200 million.

In terms of volume, the imbalance was also considerable and amounted to nearly 54,000 units. At the moment, it is unlikely that this gap will be reduced, due to the continued growth in foreign deliveries, especially from the US.

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EEC ruling hastens free competition in European telecoms

Donald Kennett reports on how British Telecom was found to have contravened the Treaty of Rome

A BIG step in the liberalisation of European telecommunications was taken by the EEC Commission in a ruling last month against British Telecom.

The Commission was applying the Treaty of Rome rules on competition to a telecommunications case for the first time. It decided that BT should allow UK-based telex bureaux to relay messages between two or more countries outside the UK, although this is contrary to a recommendation from CCITT (the International Telegraph and Telephone Consultative Committee), the body through which the national telecommunications authorities (PTTs) co-ordinate their activities.

BT had allowed the traffic at one time. But in 1976 CCITT agreed on the relevant recommendation. BT applied the recommendation in 1978 after coming under pressure from fellow PTTs which said BT was depriving them of revenue.

A complaint about BT's activities was first made to the Commission in 1979. The Commission balked at dealing with the case when it came up for review in 1980.

It was only taken up last year because of the determination of Frans Andriessen, who became commissioner for competition in 1981. He wanted to make it clear that the EEC rules on competition also applied to industries such as telecommunications, banking and insurance, which are notoriously uncompetitive. Andriessen is a former Dutch Finance Minister.

BT acquiesced in the Commission's decision rather than be taken to the European Court. But the Commission regarded the case as an easy one since it was in BT's interest to handle the extra traffic and thereby earn extra revenue. The traffic is attracted to the UK because transatlantic rates from some other countries are up to four times as high at BT's.

The PTTs have unanimously believed that telecommunications is a natural monopoly – it was in the public interest, they said, for services to be provided by a single organisation which could use some services to subsidise others, with the aim of attracting the greatest possible number of subscribers.

The principle has been extended to the international scene, where the PTTs have co-operated in minimising the competition between themselves.

This belief is increasingly being challenged as the number of subscribers in the industrialised countries approaches one per household, and as technological developments begin to promise more new devices and services than a single organisation in each country could handle.

The strategy for telematics (telecommunications and information handling), drawn up in 1979 by another EEC department – that of industry, energy and research – stated that national PTT monopolies would be inappropriate to the long-term problems of adopting the new techniques and products that would come to telecommunications.

If Europe wanted a proper share of world markets, it said, it would have to do better than piling up monopolies.

Meanwhile in the US and the UK government-led changes have been made with the aim of bringing more competition into telecommunications. While the changes have concentrated on domestic operations, international links have been affected too.

In the US, first Satellite Business Systems and then four telex companies have been allowed to set up international links for voice traffic.

In the UK, Mercury has been allowed to set up alternative international links, but only through British Telecom. The liberalisation programme has stopped short of allowing straight resale of telecommunications circuit capacity, and specifically excluded transit services between other countries from the range of value-added network services to be made permissible under the VANS general licence issued last year.

This is where last month's EEC ruling comes in. It is primarily aimed at telex services, and its jurisdiction is only over trade between member states. But the principles invoked are more generally applicable, and telecommunications between member states is ripe for their application.

> The Commission concluded that BT has abused its dominant position in a substantial part of the common market by limiting the activities of the telex bureaux to the prejudice of customers located in other EEC member states

The bureau that raised the complaint, Surrey-based Telespeed International, said that 85% of its transit traffic either originated or had its destination in a member state.

Computing Services Association general secretary Doug Eyeions said that the lack of open communications channels was an important factor in delaying the progress towards a true common market. Welcoming the Commission's ruling, he said: "We in the European Computing Services Association have been hammering away at this for three years, talking to the EEC and CEPT (Conference of European PTTs) about the problems of transborder data flows and high tariffs."

Telespeed's operations manager Maurice Potts said: "We can now act freely without feeling we have a wedge over our heads. We will be able to advance to new techniques at a faster pace without worrying can we do this or can we do that."

Potts said that the bulk of the company's services were to overseas customers and if the ruling had not gone in its favour it would have had to close down.

But despite the extra revenue for the UK and the continued survival of one of its telex bureaux, even greater benefits may go to other countries, according to the commissioner's special adviser on competition, Ludovic Briet. "We hope this will be the first step in a much greater opening up of the telecommunications market," he said. "The PTTs are traditionally very restrictive in their thinking. No-one should blame BT for infringing the EEC rules. On the contrary, we should recognise that it acknowledged the infringement."

Many other governments were thinking about deregulating their telecommunications, but it was not happening yet, he added. Meanwhile the Commission was planning to process some more cases against telecommunications authorities, the first of which was expected sometime this year.

Reports have suggested that the Commission has a strong interest in the German Bundespost's policy on modem supply, but Briet refused to confirm this. The Bundespost is changing from a policy of allowing the private supply of modems to one in which it is to be the sole supplier.

Its reasoning behind this is that the advent of digital networks will make modems obsolete, and it wants to be able to replace them all at its own convenience with digitial interfaces operating at the same speed. The customers should not even be aware of the difference, and the Bundespost should be able to make the replacement in the most efficient way.

In the case recently decided, the Commission concluded that in contravention of Article 86 of the Treaty of Rome, BT had abused its dominant position in a substantial part of the common market by limiting the activities of the telex bureaux to the prejudice of customers located in other EEC member states.

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its ruling in December.

ANDRIESSEN . . . *Determined to get a ruling on BT.*

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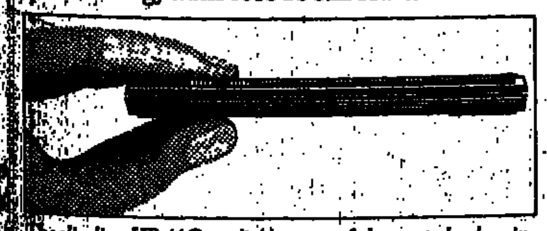

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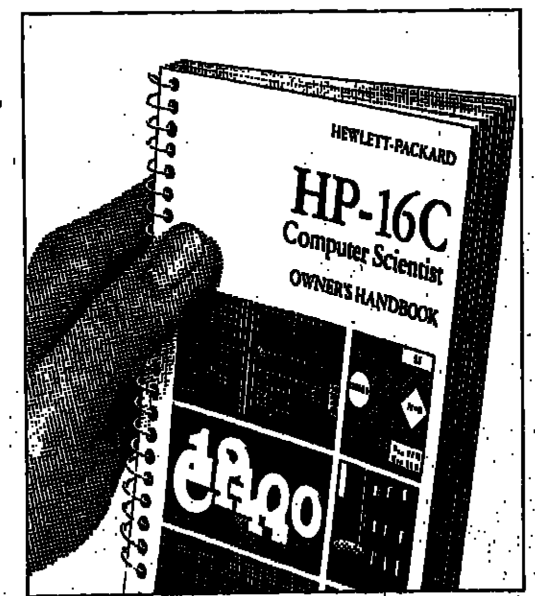

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INTERACTIVE VIDEO SYSTEMS

An industry is taking off in the US that could soon bring new manufacturing jobs to the UK, says John Kavanag

UK chain adopts video industry's latest baby

Mothercare could be the advance guard of a multi-million pound industry.

ANYONE who has popped into Mothercare recently for all the paraphernalia that goes with young children might have noticed a video machine showing film of the company's products being modelled. On closer inspection, the shopper will have seen that different clips of film and soundtrack, each covering a different product, can be called to the screen by pressing buttons underneath.

This is the advance guard of an industry which according to its members could bring new manufacturing jobs to the UK and spawn many offshoot companies specialising in programming — both for computers and for the small screen.

It is the interactive video disc industry, dominated by small handful of Japanese and ' S companies. In the US about 30,000 interactive video disc syste s have been installed and the nun.ber is expected to more than double in 1983. In the UK there are thought to be fewer than 100, most of them in Mothercare shops.

The interactive video disc system is a development of a domestic service which is connected to a television set to show films recorded on discs. The discs are roughly the size of long-player records but recorded and read by a laser beam.

Simple facilities such as fast and slow motion are standard. In Europe Philips is easily the leading supplier with its Laservision machine.

It was a relatively small step in terms of technology for the disc player manufacturers to put in a microprocessor and some memory and dramatically increase the scope of their machines, especially in the training field. The random-access nature of a disc provides a versatile medium for presentations compared with purely sequential video tapes.

As a simple example, training courses are put on disc in the form of films of a lecturer interspersed with clips representing different situations. The lecturer on film can ask the student questions about a situation and "yes" or "no" answers can be given by pressing certain numeric keys on a simple remote control keypad. The read head then moves to different sections of film depending on the answer — for example to the next lesson or to a revision exercise.

The control program for the course is read into the player's 1K memory from the disc as it is

TOMBS . . . Wants govt cash.

loaded. The program can tell the processor to take certain actions at specific film frame numbers. If, for example, a piece of film asking the student a question ends at frame 4,650, the program can tell the processor to stop the film at that frame and await input from the keypad, branching to frame 10,000 for a revision lesson if the input is zero and carrying on from frame 4,651 if the input is one.

Big users of these systems for training in the US include Ford and General Motors, leading banks and IBM.

IBM has put together over 100 discs, which it runs at its so-called guided learning centres. These centres are for training customers in the use of IBM equipment. The player can present film of, say, a financial terminal keyboard and display.

The trainee can use the player's keypad controller to "press" the keys and the microprocessor can switch to different clips of film to show the display after each key depression. IBM points out that such simulation is much cheaper than providing each student with a terminal.

But this is only the start. For the player manufacturers are now adding standard interfaces so that complete microcomputers or even bigger machines can be linked in to control the machines.

The extra power of the external computer has opened up new potential in the simulation field. The computer can handle more input sources and control the player according to data from single or multiple points.

The US Army, for example, has set up a tank simulator to train its drivers. The video disc holds film of the driver's view of different journeys over a stretch of ground. The trainee driver can adjust the speed and direction through mock-up tank controls. The computer interprets the signals from the tank controls and directs the player read head to move to the relev pieces of film and to run m quickly or slowly.

In the US all this activ involves just two manufacture Sony and Pioneer Electroni Early this year Pioneer got t rights to build a system incom made by Disco-Vision Associa which is owned by MCA - a IBM. Following that sale Dis Vision is largely dormant, earn an income from royalties from licensee.

In the UK the market could about to take off. Philips is stay tight-lipped, but says it is workin on an "advanced" machine, co plete with a standard RS232 i terface for connecting a compu The product will be launched not in 1983.

Thorn EMI is working with Japanese company JVC on machine for industrial use, wi with links to external devices July it formed a company call Thorn EMI Video Facilities offer programme production s vices.

Thorn EMI has a mothball factory in Swindon, put up a £ to make discs for a domes machine from JVC. The U launch of the product was delay as the recession hit consum spending but the factory is a available if the industrial mar takes off.

One UK company, a small co sultancy set up purely to advise the use and programming of i teractive video disc systems, b lieves the potential is so great - has been proved in the US - bu it wants the government to put some pump-priming money. Th company, Videodisc Technolog is run by an industry heav weight, Don Tombs, who was u til last year at Philips, where h spent 12 years. By the end of t period there he was in charge the office automation product

"We'd like the Department Industry to put up some money bring machines into the UK, eit the likes of GEC and EMI to m them and places like London Uni versity to do some development programming," says Tombs.

"We've had tremendous interes in these systems from colleges universities and there are enor mous opportunities for UK com panies — not only the equipm manufacturers but the soft firms such as software and pro gramming consultancies."

Tombs points to *Mothercare* success as a hint of the poten The company tried out its systems in four branches, with film clips on five very distinct ranges of products. The result a 20.1% increase in sales of products in the four shops increase which paid for the in the machines in less than a y

One disadvantage of interac video discs is the cost of m the films. "It costs between £1 and £2,000 a minute to make industrial film and the discs pr grammes are more expensive cause they are not linear like tape films," says Tombs.

This year the number of interac tive video disc machines in the U is expected to reach 500,000. But is likely that an industry that h spent an estimated $1,000 milli on research, development and marketing over the last five years will be looking eagerly towards untapped Europe.

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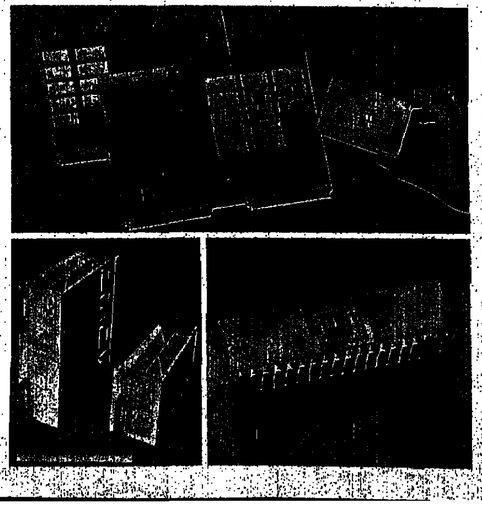

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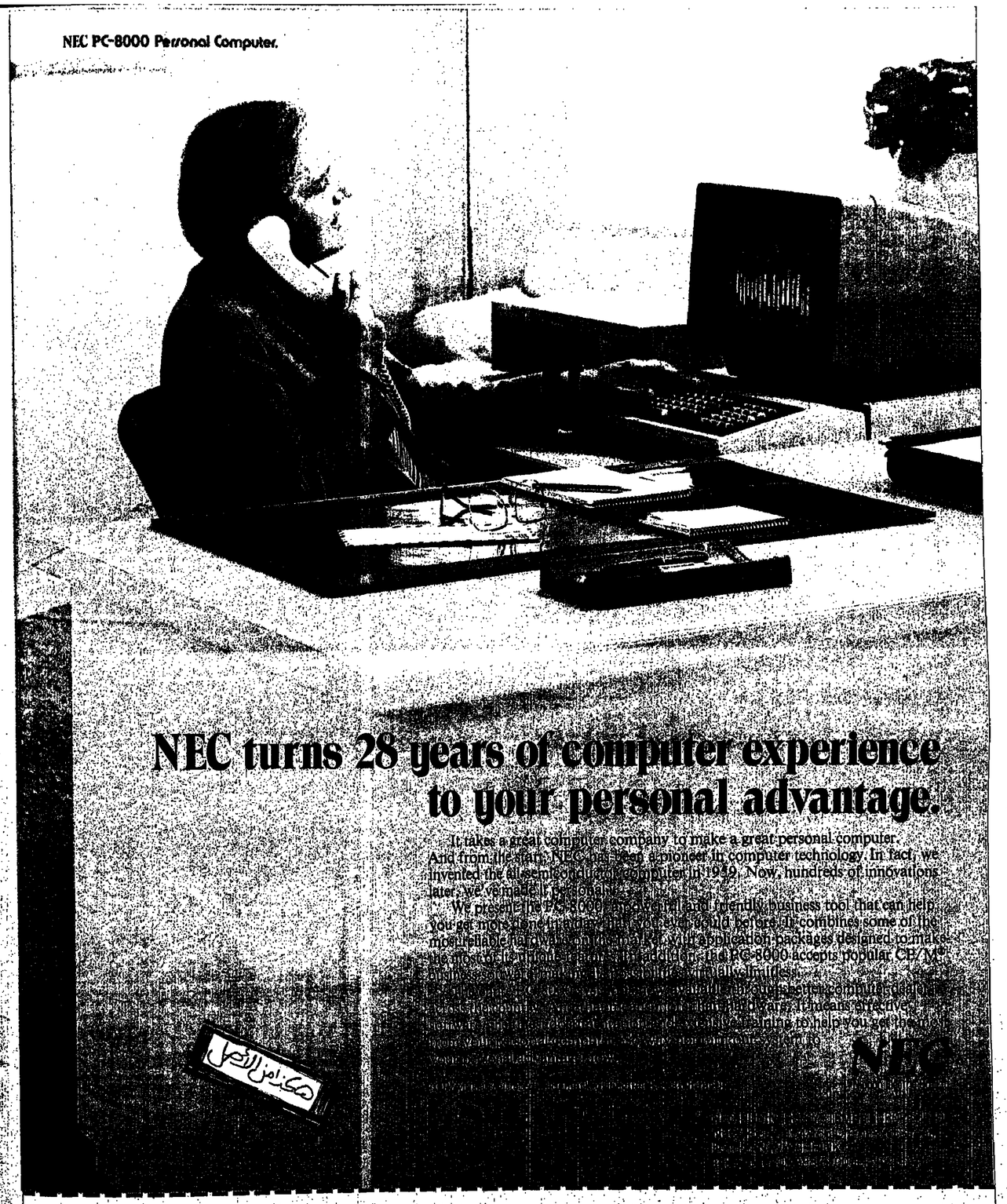

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Computer Weekly

PLATFORM

Robert Street runs the European editorial end for a major US publisher of analytical reports

If high technology offers no solution, what use is it?

THE great technology con could have started long ago with UFOs, because some sections of the community have an urge to believe in the incredible, the impossible or the most unlikely. Devotees of the UFO and other cults are fanatics, who spend long hours on proving to themselves – and trying to prove to others – how right they are and, if they're religious, how they are about to save humanity.

The same crusading evangelism is typical of successive ministers of technology and their present day counterpart, the Minister for Information Technology. The same deafness to all pleas that they just might be wrong or misguided, at best, is in evidence. Even convincing proof, as given to a certain section of UFO aficionados, is treated with disdain.

Not so long ago, a group of dedicated watchers kept a month's long vigil at a hill located in the British countryside. The reason? Some time before, a picture appeared in the UFO columns showing very clearly a giant unidentified object. The faithful believed. This particular UFO picture was planned by a group of British scientists, not from any spirit of prankishness, but because they wanted to find out just how strong were the beliefs of the UFO fraternity.

The picture they planted was a total fake, obvious to anyone who took the trouble to examine the background objects and ask a few whys and wherefores. But there were no such questions. The brotherhood wanted to believe.

The same tendency towards UFO disease is shown in IT82 and in the ever-widening clamour for more computers in schools.

Overall the child has no defence against such forced exposure in the same way as he has no defence from having a multiplicity of useless academic subjects stuffed down his throat.

But will the child so taught have any idea of the applications of computers? Will he understand the electronic principles behind them? Would he be able to construct a basic crystal radio set? The principles and basics of electronics and constructing electrical and electronic devices are not going to change. Programming language fashions change almost as frequently as the wind. Programming may be dead in five years.

The same UFO disease is displayed in dealing with industry, except that the message there is more insulting. "You lot of manufacturers know nothing about technology. Apply it, however inappropriate it is, and we'll give you a grant to risk going broke."

There appears to be genuine surprise in the corridors of power that there is no queue to take advantage of this free transistorised coke. What these technological enthusiasts ignore are timing, marketing and proper backing.

If I'm making motorbikes, no amount of modern technology will do me any good, because, at the moment, even the Japanese are fighting each other in a vastly oversupplied marketplace. What is the use of a microprocessor-controlled lavatory if the world has warehouses full of their less well endowed counterparts?

Can the same disease be detected in the minds of those who seek the so-called fifth generation? If that figment ever becomes real, would it stimulate the sect to go on to the search for the sixth generation? What are expert systems except computers applied to areas in which they haven't been applied before? What is artificial intelligence except a display of man's ingenuity and not the computer's?

This same ingenuity leads to the most likely fifth generation, so-called. Hitachi has already shown a computer which will answer "four" in its best computer voice, if asked verbally to multiply two by two. The chances must be good that in the not too far distant future, subroutines will consist, in large part, of human speech and programmers will talk even more they they do now. Typists will become a moribund class. A letter will be printed after receipt over the telephone with no human transcriptor.

But none of this will do one whit to solve sales, marketing and manufacturing problems. It will help the solution's expedition. But it won't solve anything by itself.

And if high technology offers no solution to any nation's ills what use is it?

There has been a great deal of plainly wrong thinking about computers. This can be laid fairly and squarely on the shoulders of those who endow them with mystical and genie-like qualities, which they are far from possessing.

Robert T. Street

PROFILE

Trend-setting comes easily to this wizard fund-raiser

THE Sydney Development Company may sound a bit like an Australian building firm, but it is, in fact, a software house. And a Canadian one at that.

It came into being in May 1978, emerging out of the shell of a mining company, which all seems extremely bizarre for a software house, until you meet the president of the company, Tarrnie Williams.

Williams is not so much a software man, more a financial wizard, with a business pedigree as long as your arm. He started off in insurance and investment, before joining the Canadian Corporation for the 1967 World Exposition (Expo '67), where he became project manager.

After that he joined IBM, and ended up creating the company's first computerised project management system connecting all the branch offices in Canada's Western region and then doing the same in San Francisco.

That was not all: he helped set up a planning system for the NASA project that IBM was contracted to perform for the US government, and set up a modified version of it in Nassau in the Bahamas. He also developed a project management course for IBM customers, back in 1971, and then went to work at ICBC.

So on to 1978 when he bought the New Chief Mines, a shell company on the Vancouver Stock Exchange, and turned it into Sydney Development. That was when the real financial expertise began.

"We raised $300,000 through a private placement of the shares and went on to develop Connect 2, a series of automated computer programs which translate data into the formats required by IBM machines.

In December 1980 he made the second fund-raising move by issuing $1.5 million worth of shares and warranties, and in June 1981 raised over $1 million on a rights issue. "Most of that money we spent on setting up distribution outlets – eight in the US, five in Canada and one in London, set up in April 1981."

He got an extra half-million dollars through a further rights issue in December 1981, and in the autumn of that year he floated the company's first tax shelter. That involved selling off units in the firm at $1,000 each in minimum quantities of ten units, and spending the money on research.

Under the legal terms of the fund, research spending is tax-deductible and there is an additional 10% investment tax credit. As well as the tax shelter provided for the investors, they also have the opportunity to exchange their units for shares in the Sydney Development Corporation.

Sydney was the first software house to use the tax shelter approach for raising capital. The 1981 tax shelter fund raised almost $8 million, and the 1982 fund was announced in September 1982. The 1981 proceeds were used to finance a real estate software package, a relational database system as an alternative to IBM's SQL Query system, a mini-based library system and a brokerage system.

In August Sydney became the first software house to be listed on the Toronto Stock Exchange, the blue chip of the Canadian markets. The company at that time was valued at $3.1 million.

Williams commented: "Sydney is becoming used to setting trends."

Although the same kind of tax shelter system is not viable on the British financial scene, Williams is confident his financial expertise can be put to use in Europe as well. "In the UK there is the business start-up scheme of which we could take advantage. We're also looking at the idea of setting up a third party that would contract staff to Sydney UK.

"Sydney's strength is innovation, in raising capital and taking advantage of the marketplace."

Williams is certainly good at that. The latest thing to come out of the Sydney Development stable is the computer game Evolution, where you start out as an amoeba and have to advance up the evolutionary chain until you end up as a human being. If you manage that you get wiped out by an atomic explosion and have to start again as an amoeba, only this time the evolution process is, not surprisingly, more difficult. The game, developed on an Apple by two Vancouver teenagers, has 99 levels of difficulty.

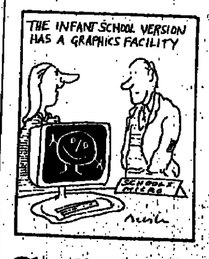
In North America Evolution will be marketed by Computerland, and Williams is having talks with people like Commodore and Atari in Europe.

This is Sydney's first entry into the fast growing computer games market and we are confident that Evolution will be the first major international computer game to come out of Canada."

Yet another first for Sydney?

WILLIAMS . . . "We could take advantage of the UK business start-up scheme."

DOWNTIME



Tomorrow's world

MANY readers will have been on seminars where industry luminaires expound on things like MVS, SNA, VME and other sets of initials. Very useful they often are, too – but usually they cover products that have been announced and that people actually use.

Now a UK firm is (accidentally) trying a new approach: it is running a seminar on a Digital Equipment product which isn't available yet. Computer Age Systems is expecting 300 people to turn up to hear about DEC's long-awaited new Basic.

"The product has been leaked and talked about for so long that we thought it would have been released by now," said a spokesman. "Perhaps it will be by the time of the seminar in March.

"In the meantime what a sales message we have: 'How to avoid being technologically obsolete – buy tomorrow's information today'."

All will be revealed about DEC's Basic by Al Clnl, an independent guru who has inside information through his work with DEC development teams.

Who is being exploited in this photograph? Is it the girl, the monkey or the computer? No marks for those who suggested the curtains.

Chad's guilty secret exposed

I HAVE been called many things in my time, some pleasant, most derogatory. But even my hard, cynical shell was rather shocked the other day when I opened a letter.

Dear Sir (it said), You are an angelus.

Panic gripped me as for one terrible moment I thought my guilty secret was out.

I read on: "You are trying to advance up the evolutionary chain to become a human." Was there nothing of my secret double life unknown to the writer of this terrible letter?

VDUs can hurt your libido

THE pernicious effects that gazing all day at video terminals can have on one's health are by now well known. But did you know that it can permanently damage your libido?

Well it can – according to a survey report from the Equal Opportunities Commission. Men are most at risk, and can become completely impotent, says Ursula Huws, author of the report.

Down to earth

WITHOUT wishing to give the impression that I have an unhealthy obsession with things sanitary, I feel it my duty, for a second week, to report on a high tech toilet.

A collection of the finest porcelain from around the world, 29 examples of sewage processing system input devices, have been assembled to test the longevity of those jolly little blue loo things which scare the daylights out of you as you gaze into the bowl after a particularly heavy night.

The whole thing is under the control of one man. No, only kidding, a computer. A Commodore activates pneumatic controls to flush each unit at regular(!) intervals.

Chad

10 YEARS AGO

FROM COMPUTER WEEKLY OF JANUARY 18, 1973: Only 1,400 staff had been made redundant between 1962 and 1972 because of computerisation, according to a Department of the Environment study . . . IBM makes a settlement with Control Data Corp, bringing to an end a four-year-old anti-trust suit. Burroughs obtained an order for a $2.1 million B6700 from Ford.

Liveware File by Don

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, January 20, 1983

User reaction is what counts

IF there is any doubt left as to the ascendancy of the microcomputer, the spate of announcements in the first few weeks of the New Year should convince even the most confirmed non-believer that micros are here for real.

DEC has made its play, last week announcing UK dealers and software suppliers for the eight-month-old micros it reckons will make up one-third of its business in three years time. The week before Wang said the same sort of thing, except that the proportion of its micro business will be 40% this year.

IBM has at last released the Personal Computer into the UK officially, and Apple yesterday took the wraps of the long-awaited Lisa.

But this does not mark the end of the line for minis and mainframes. The markets these computer firms are aiming at with their micros are the large company offices, buying machines by the hundred or thousand, not the small business moving to computers for the first time.

Large companies already have their big machines installed. All these micros are going to surround the minis or mainframes, linking into them and to each other, while giving the business user local processing power.

That is why DEC puts so much emphasis on the compatibility its Professional micros have with existing bigger DEC machines. That is why Apple will be offering 3270 emulation when Lisa comes out in the summer. That is why Wang's Professional Computers have built in WangNet interfaces and hardware options allowing them to look like ordinary terminals as far as other Wang systems are concerned.

And that is why IBM will be offering 3270 emulation on its Personal Computer.

And the user is not going to be a computer person.

The decisions about which machine to pick are going to be made on new criteria. The dependability of the manufacturer, so long a micro bugbear, will be less open to doubt.

The particular programming languages and application packages available will weigh less heavily as more and more of the machines come out offering the same or similar choices.

It is going to be the reaction of users to the actual thing sitting on their desks that will count – and computer managers will have to learn what is wanted, or find the buying decisions taken away from them.

Backing a winner

COMPLAINTS are often heard that the City, being a conservative institution by nature, tends to go for the safe bets, the assured return. As a result, the argument goes, speculative technology ventures get killed off at birth for lack of funds.

Recent experience suggests the theory is unfounded. As our special report on finance shows (see pp.22/25) there is no shortage of funds available for high technology.

Yet there are so many technology horses to choose from that the odds against backing a winner are high.

The most celebrated success story of the moment is Clive Sinclair.

ICL is another company which is not experiencing too much difficulty in raising funds. One year ago, it had to sell a rights issue at par value, that is, 25 pence a share. This time round ICL can command a price of 60 pence a share.

The market price shot up to 86 pence towards the end of last year. The company could have got more if it wanted.

ICL could move more rapidly into profitability if it chose. That the management has cautioned shareholders not to expect a banner year in 1983 is evidence of ICL's intention to consolidate its position for the benefit of the true long-term investor. The return to confidence is due in large part to the leadership qualities shown by Robb Wilmot.

The City is as much prepared to put money on the jockey as on the horse. Without an entrepreneur of some stature to take charge, any technology venture can wave itself goodbye, no matter how promising it looks on paper.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by John Kavanagh of Wimbledon, who wins £5.

For the three runners up there will be the new Sinclair ZX81.

This is a nifty little personal computer which you plug into your television set. I'm not at all sure what happens then. I expect it will boss you about a bit.

The Standard

LETTERS

Question of probability

IN your front page article on the possibility of using expert systems for social security you say: "In the DHSS application there would be no question of probability – claimants are eligible or they are not" (CW, January 6). The logic involved in this is faulty.

If, having tossed a coin, I try to guess whether or not heads come up, there is certainly a probability involved, even though "either a head occurred or it didn't." Again, probability attaches to a verdict in court, even though the defendant is either guilty or he isn't.

Probability in these cases attaches to the correctness of the judgment we make about a state of affairs, even if, as in the court example, no probability inheres in the generation of the state itself. In the case of judgment concerning social security eligibility, probability is likely to figure prominently.

IAN BIRNBAUM
Head of Statistics & Computing
Romsey Abbey School
Huntingdon

Portability

I READ with interest the David Ferris article on portability in the December edition of Software Month. However, I think he is a little behind the times, possibly because of his dependence on the experience of American companies.

Here at PPL we produce the Ace fixed assets package using the Delta development system, and we have already installed it in over 40 sites in four different countries and on seven different machines. We maintain a single source code on our computer and use Delta to generate correct Cobol for the specified target machine automatically for both online and batch systems.

With an advanced development tool like Delta we have achieved significant improvements in productivity and, most importantly, provided our customers with improved reliability, functionality and adaptability for their systems.

J. J. FLAHERTY
General manager
Package Programs Ltd
London SE1 8HW

Personal

AS a user of microcomputers within the engineering industry, I found your feature on personal computers most interesting (CW, December 16/23).

It is very difficult for serious users of micros to keep apace with developments as most published information is aimed at the cheap hobby end of the market.

A similar feature every few months, would I am sure, be a boon to all. Many engineers are now using standalone micros for increasingly complex "number crunching" formally in the mini-computer field.

A. J. GRAY
Technical engineer
Mactaggart Scott and Co
Loanhead
Midlothian EH20 9SP

Assumption

M. R. DOLBEAR (CW, December 9) assumes the packed information is in binary. That is not stated in the original report (CW, November 25). If the invention is an implementation of 400,000-ary logic, the claim to compress a gigabyte into 2.5 Kbytes should not be doubted.

Prof TONY GREENFIELD
The Queen's University of Belfast

The Editor welcomes letters commenting on subjects published in Computer Weekly, or on original topics. All letters must be accompanied by the writer's name and address, not necessarily for publication. Letters may be cut.

Statutory Sick Pay

FROM Cliff Dilloway's informative article on Statutory Sick Pay (CW, January 6) it would seem that the computer industry has failed to appreciate the service that should be offered to the majority of employers. Happily, this is not a true representation of the situation. It is an interpretation of the scene as observed from Dilloway's particular perspective. If an organisation is marketing paper and pencil methods, it may be advantageous to play down those aspects that can be computerised.

It has been obvious since July that there is significant contribution to be made by the marriage of computing techniques to the calculations demanded by the SSP rules. The manipulation of the calendar, the cornerstone in the successful determination of entitlement, is ideally suited to mechanisation if one considers the number of backward and forward looks one needs to take. The accurate determination of entitlement depends to a large extent on knowledge of what has gone before. Computing technology can offer such memory capability at a very realistic cost.

As a result a few companies, my own included, have actively tackled the problem of incapacity recording, entitlement determination and payment calculation. Initial estimates show that operational costs can be reduced by tens of thousands over three years in large organisations and that human error rates will be kept to a trivial level – no small consideration when it comes to dealing with the DHSS enshrined in N1227.

Some computer systems use plain English better than others. Be that as it may, a true expert system is able to elicit the information it needs by asking non-technical questions and then produce clear and accurate results.

Such systems will be operable by non-trained persons – one covering for a colleague on holiday perhaps. The savings in staff training alone will justify the initial capital cost.

The advantage of a standalone micro based expert systems is the freedom it confers on the employer to treat employee sickness as a personal matter and the private "grief" of the individual. The onus placed on employers to accept or reject evidence of incapacity in relation to the work an employee is expected to perform is a serious challenge. Not one to be delegated to the computer bureau round the corner.

Some of us have seen the light. Systems are available. Dilloway can come and see for himself.

J. H. G. SMITH
Director
Shumwari Associates
Marlow, Bucks.

Mr Smith has not, unfortunately, explained his definition of expert systems. – Editor.

First government contract

WITH regard to the story, "Revenue Switch" (CW, December 16/23). I would like to point out that the contract awarded to Data Training Ltd to provide IBM conversion for Inland Revenue's programmers in Worthing is the first *government* contract for IBM training that our company has received. Nor, as was reported, the first contract we have ever received for IBM training.

PHILIP CORKER
Marketing manager
Data Training Ltd
London EC4A 1EJ.

Telecomms Year

YOUR leader (CW, January 6) stated that ". . . World Telecommunications Year, handed to it on a plate by the United Nations, has so far been ignored. And that at a time when the word 'communication' is on everyone's lips, if not yet worked out in their minds."

The Institute of Data Processing Management avoids the path of taking public positions but doing little about it. We concentrate on taking action. In March 1982 at the suggestion of Alex Park, our president, we decided to dedicate our 1983 Yearbook to World Telecommunications Year and more than a quarter of the 40 articles which will appear in it will be on the theme of telecommunications.

It will be sent to members as part of our "benefits-to-members" package towards the end of March and available to non-members at £8.75 including UK postage.

EDWARD G. CLUFF
Secretary-General
IDPM
London WC2

Headcount

YOUR piece "The DP Industry has Shed its Fat" (CW, January 6), which states that Honeywell UK's computer business (along with other US computer subsidiaries) "shed an undisclosed amount of fat" in 1982, is incorrect.

Honeywell Information Systems' net headcount last year remained at exactly the level of the previous year.

In 1983 the company will continue to recruit for key sectors of its business, particularly for the Customer Services Division where larger numbers will be needed to support continuing growth.

A. WOOD-SMITH
Director External Relations
Honeywell

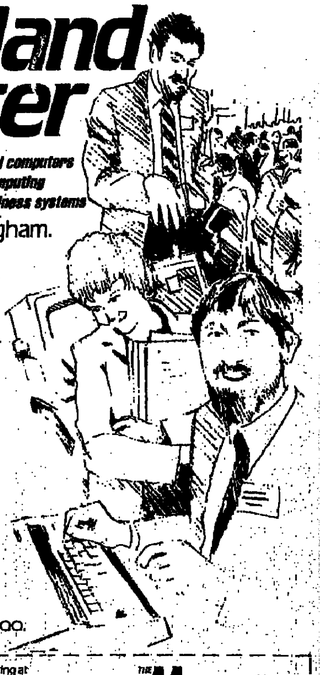
NOW in Birmingham – the centre of industrial Britain . . .

THE Midland Computer Fair

Personal computers
Home computing
Small business systems

Bingley Hall, Birmingham.
April 28-30, 1983

Sponsored by Practical Computing and YOUR COMPUTER



This exhibition is the ideal showcase for companies who need to demonstrate their products to the fast expanding market for home and personal computers, small business systems and associated software. When you consider that the markets for personal computers are regional and that Birmingham has a developing computer awareness with a great deal of computer expertise in the area, you'll appreciate the need for The Midland Computer Fair. The public has already demonstrated its appreciation of The Computer Fair in London by sheer volume of numbers. We know the success will continue in Birmingham.

Personal computers are part of everyday life.

Make Sure Your Computer Products And Services Are Seen At The Midland Computer Fair.

For the full story contact the Exhibitions Manager, The Midland Computer Fair, IPC Exhibitions Ltd, Surrey House, 1 Throwley Way, Sutton, Surrey SM1 4QQ.

Please contact me with further information about exhibiting at The Midland Computer Fair.
Name
Position in Company
Company
Address

THE Midland Computer Fair

Leading-edge OEM products are just part of the story. Wait till you hear about the support we put behind them.

When you're looking for a supplier, obviously you want the most competitive product available — at a competitive price.

But those two things are really just the beginning of a solid, long-term OEM relationship with Hewlett-Packard. We also give you the service, training, documentation, support and the commitment to customer satisfaction that you'd expect from a major international company.

You can be one of our biggest strengths. And vice versa.

Whether you integrate our hardware into your systems, or develop software for specific applications, your special expertise creates entirely new markets.

So we want to make it easy for you to do just that. We start by offering a wide range of products to work with: from fully programmable hand-held computers and desk-top models to complete data processing systems; along with an even wider selection of peripherals that are engineered to work together. That means you won't have to worry about interfacing.

With our modular approach to hardware technology, you can buy boards, boxes, or complete systems, and concentrate on building the products your customers are looking for without taking on any new problems of your own.

We put a lot into our products. And a lot more behind them.

You're probably familiar with the kind of performance and reliability we deliver. But we think you'll be just as pleased to see the level of support we give you.

Since we're interested in solid, long-term relationships, we're ready to put all the strength of our support organisation behind you and your customers. So you can offer site planning and installation; contractual maintenance; per-incident and self-support services.

You'll have the resources of our 170 offices in 39 countries behind your product, on any basis you like. From comprehensive, 24-hour, on-site maintenance to economical 'return-to-us' service.

We do a lot to protect your software investment, too, by making our new products compatible with our earlier models. For example, programs developed more than eight years ago for our first HP 3000 still run on our latest generation of the same computer. So you can upgrade to a much higher-performance system at practically no software expense.

In short, we do all these things with one simple goal in mind: to help you make a profit. Because if *you're* not successful, *we're* not successful. It's as simple as that.

Let's work together.

Obviously, there's more to a successful OEM relationship than we can discuss here. We've put together a new OEM brochure that gives you full details about our products, policies, and the way we protect you. It even covers the special discounts we offer for your prototype development. Write to us now for a copy. Or simply call your local HP office. Then let's go to work.

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هكذا من الأصل

WORKPLACE

Curing portable software blues

IF only software were easier to maintain, soaring computing costs might subside, yearn company managers at conferences. Portable software is a particular nuisance.

The key to easy maintenance is the trio of design, documentation and test data. These need extra consideration if the software concerned is to be between different computers.

The design must cater for the languages available on the machines on which the software is to be implemented, known as the target machines. All deluxe conveniences offered on individual machines have to be avoided, and common standard versions of the languages adhered to.

Often it is necessary to split the design into programs that are independent of the machine, and programs like input/output routines that cannot be separated from local idiosyncrasies.

Word processing software can be a particular problem because it exploits the facilities of individual video terminals as well as different processors.

One solution is to build a library of scripts that describe each change of hardware. The scripts can then be merged as appropriate to change to different equipment.

One way of ensuring that all changes to a portable package will be implemented without error is to use a preprocessor. This allows the programmer to use a dialect of the computer language that is independent of all machines.

Each target computer then has its own compiler that produces the local dialect, into which much of the design and testing effort has to be put.

Preprocessors have often been used for portable software written in Fortran. They have the disadvantage of consuming extra processing time, and producing extra error listings for the user to wade through.

Documentation needs a different emphasis with portable software. Each machine must have its own detailed description of how to implement the programs, with careful avoidance where possible of jargon that dogs the computer industry.

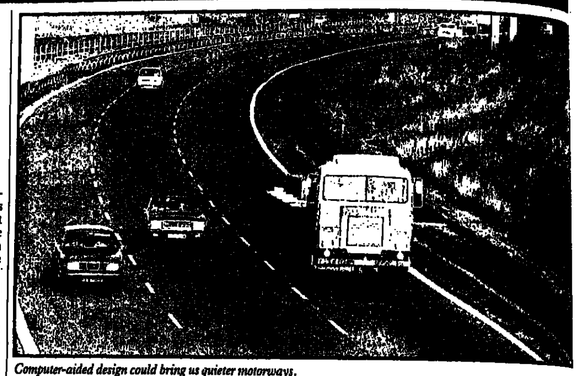
Often authors of the software have to assume that certain operating systems and control languages will be available on the target machine. Fair enough, but let it be known in the documentation exactly what assumptions have been made.

Whenever software is installed on a new machine there are bound to be problems. These can be reduced by providing test data sets that demonstrate that a new implementation has been successful.

Adequate test data also gives the implementer confidence that the software has indeed been perfected for the machine.

The test data comes in two groups: static and dynamic. Static testing involves finding out as much as possible without executing the code.

More can be done in dynamic testing. It is possible to generate test data that exercises each statement once for example. Boundary conditions can be checked, and the so-called "off by one errors", when loops of code are performed once too often, or once not often enough.



Computer-aided design could bring us quieter motorways.

Package helps reduce traffic noise

MOTORWAYS are a sore to the eyes, ears and nose. Too bad if you have one at the foot of the garden.

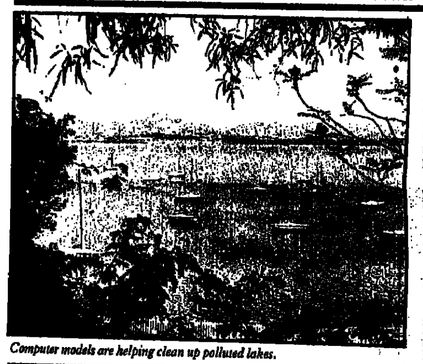
But their ugliness can at least be mitigated by careful landscaping and astute positioning of noise-reducing barriers.

Design of a motorway for minimum noise involves many difficult and tedious calculations ideally suited to a computer. Small surprise then that a design package called Mway has been written specially for the job by Applied Research (ARC) of Cambridge.

Mway will shortly go into action on the 10-mile section of the Manchester Outer Ring Road. It allows traffic noise to be estimated from fictitious road dimensions along each stretch of road, and positions of barriers, trees, hills and buildings.

The results can induce the design engineer to cut the road deeper or erect strategically placed barriers to reduce noise. These could consist of wooden fencing or earth mounds worked out in operation with the landscape architect.

"The main benefit is that it takes out a hell of a lot of drudgery," explains ARC software consultant Bob Leeson.



Computer models are helping clean up polluted lakes.

Model brings dirty dying lakes back to life

A CYNIC once defined a practical man as the exploiter of his father's errors. No doubt victims of poorly designed software would attach this definition to applied systems analysts, whose job is to apply proven tools rather than innovate.

Certainly the applied analyst is poking a nose in a diverse range of disciplines these days, latest in the role of honour being in the control of polluted lakes. In particular shallow lakes, which can be thrown off their ecological balance far more quickly by pernicious human excrement.

Two lakes in particular have fallen under the analysts of late: Lake Erie on the Canada/US border, and Lake Balaton in Hungary. Erie was condemned as the most poisonous of the Great Lakes spanning half of North America, and Balaton is the largest lake in Europe.

Both lakes are uncommonly shallow. Balaton is the largest shallow lake in the world, with an average depth of just three metres. Both became a monument to man's crass carelessness of the environment and parts have been declared unfit for swimming.

Clearly a case for the systems analyst. Indeed IIASA, the International Institute for Applied Systems Analysis, has already gone to work on Balaton, making models of the effect of weather and rate of pollution on the levels of nutrients in the water such as phosphorus, nitrogen, carbon and silicon.

Man-made pollution tends to increase the concentration of these elements in the water, which causes a boom in algae and small underwater plant life. This plant life is decomposed by bacteria after death in a process that consumes the lake's oxygen. Result: fish suffocate and the lake stinks.

IIASA began by using the time-honoured expedient of cutting the problem into manageable slices. Each part of the lake was subjected to detailed analysis of water circulation, sediment disturbance, biochemistry and other factors before being integrated into a larger but sparser model.

The aim was to clean up the lake as cheaply and quickly as possible. The only long-term solution is to divert all the sewage flowing into the lake, the analysis suggests.

But this would be expensive and could not be completed until the 1990s. Balaton cannot wait that long, since by then its ecology would be beyond repair. So provisional remedies have been suggested, including sewage treatment.

The IIASA model has attracted the attention of the Canada National Water Research Institute responsible for Erie, which has similar properties and problems to Balaton. One of the shared problems is that in shallow lakes, the sediment is easily stirred up by wind.

Erie has already been somewhat cleansed and now there is swimming again – at least for the fish.

Both sides claim a victory in unfair dismissal dispute

by John Riley

THE EDP dispute, the longest running industrial dispute at a software house, is moving towards a conclusion.

Last week, an industrial tribunal found that technical writer Jenny Wright had been unfairly dismissed from the Sheffield software house last May. It also ruled that the reason for her dismissal had been redundancy, not involvement in union activity.

Next week the same tribunal will meet to decide whether 17 of her colleagues who went on strike in sympathy have a case.

Both sides in the dispute claim victory. Wright is "very pleased. It would have been better if we had got a ruling of unfair dismissal for trade union activity". EDP's managing director, Richard Fowlit, said that he was "delighted" with the decision. "It was a slap on the wrist for not observing proper procedures."

All the strikers claim that morale had deteriorated among many of EDP's workforce in the months preceding the strike, and that this led to an active interest in joining a union. Several strikers claim that many petty grievances were not acted upon: one comment was "a lot of niggling things accumulated".

Some of the programmers wanted to join a union as they felt they had been let down over pay.

Wright, already a union member, was approached by staff and helped organise a meeting with local Association of Scientific, Technical and Managerial Staff (ASTMS) officer Mike Frizelle.

A striker said: "Frizelle sounded moderate and said a strike was the last weapon we would possibly use." As a result 25 of EDP's staff joined ASTMS.

Two weeks later on May 17 Wright was made redundant and told to leave the company forthwith. EDP managing director Richard Fowlit, described as having a forceful personality, claimed that the decision had been taken before he was aware of her union involvement.

The recent industrial tribunal accepted this but commented on the "remarkable coincidence" of the two events. It also commented in its report: "This employer acted in a way in which no reasonable employer would have acted. No reasonable management would have done what this management did."

Both the union and its fledgling members were outraged by the manner of Wright's dismissal which they interpreted as being for union activity. A striker said: "After Wright was sacked Frizelle pushed the strike." Another commented: "The consequences weren't explained – we thought it would be over in a couple of days."

Frizelle denies that the strikers were unaware of the consequences: "Nobody was led down a rosy path," he said. He admits that he did not take legal advice over this but claims that he consulted other union officials.

"The result was that the 25 union members went on strike. Fowlit gave them an ultimatum to return to work or consider themselves dismissed for breaking the terms of their contracts. Only two went back at that stage.

"Later on a further two strikers left the picket line and returned to work. The then chairman of the strike committee, Pete Hopkins, said that they went back to the picket line accompanied by managing director Fowlit and tore up their union cards.

"Several involved in the dispute felt that ASTMS (which is anxious to attract computer employees) did not bring the big guns to bear in the dispute, preferring to leave it as a low-key local affair.

One striker commented: "ASTMS should have taken more interest. The thing was all wrong. This was a one-off case and the union should have gone all out to win it. The blacking (i.e. of EDP by other companies) was impossible in its ins and outs, and it had to come from the grass roots."

During the months of the strike Fowlit made several attempts to pay off the strikers.

WRIGHT . . . Should have been allowed to work out her notice.

'Excuse inadequate for instant sacking'

by John Riley

A SIGNIFICANT ruling by an industrial tribunal last week was that a computer employee made redundant should have been allowed to work during her period of notice.

In its report on the case concerning unfair dismissal at Sheffield software house EDP, the tribunal said: "It was put forward as a reason to justify the failure to consult Miss Wright (the appellant) or to allow her to work during the period of notice to which she was entitled, that confidentiality and sensitivity of the information which came into the possession of members of staff made it necessary to ensure that there was no leakage and that in order to safeguard security it was essential that any member of staff who was dismissed should be required to leave the premises forthwith.

"In the judgment of the tribunal that is not a special reason for requiring Miss Wright to leave the company's premises immediately in the reason of redundancy."

The tribunal considered that as the appellant had dealt with confidential information and not leaked it, it was improper to suggest that she would leak it during her notice.

The managing director of EDP, Richard Fowlit commented: "I don't see that the tribunal chairman is in a position to make such decisions – being lay people they can't take an objective view; in the computer industry the tendency is to leave immediately because of the safety consideration."

The national organiser of the union ASTMS, Tim Walsh, said: "Companies can require an employee to work out notice," and continued that if an employee wanted to work out his notice he "should be allowed to do so".

A legal adviser commented that an industrial tribunal decision has the same persuasive power as a High Court decision, although it is not binding. All other things being equal one would assume that other tribunals would decide a similar issue in the same way, and when two tribunals disagree there would be an appeal.

PUZZLER

IT is an interesting fact that (times X) multiplied by "a certain Magic five-figure integer" always gives a product containing exactly one of X, no matter what digit is selected to be X.

What is this Magic integer? page 53 for solution.

Workplace is compiled by Philip Hunter and Andrew Thomas.

PEOPLE

Sales director for ICL Traderpoint

■ ICL has upgraded its Traderpoint operation to division status to boost its third party sales. Taking worldwide responsibility for the new division's activities is Ray Piggott, who has been named director of the Traderpoint Sales Division.

Piggott has been involved in the computer industry for 17 years and has held management posts with Data General and Rank Xerox Data Systems. At Data General, his most recent appointments were as general manager, North-west Europe and, until joining ICL, as general manager, Asia marketing, based in Hong Kong.

Traderpoint, which was announced early in 1982, has already made agreements with about 200 dealers and software houses around the world. ICL expects at least 15% of its sales to come through the Traderpoint channels of distribution by 1985. The division sells, among other things, the ICL Personal Computer and the Perq scientific graphics workstation.

PIGGOTT . . . Boosting third party sales.

■ **Jenny Forrest** has been appointed to the newly created position of customer support manager for word and data processing firm Internet. She joins the company from Monotype Communications where she was a market support representative.

■ Burroughs Machines has appointed **Roger Moss** as finance director. He formerly held the same post at British Airways, which he joined in 1974.

■ **Ted Hawke** (below) has joined WordNet as sales director. He was previously a director of SPS (Business Systems). Before that he was sales manager of CPT (UK), which he joined from AES, where he was salesman and sales manager.

■ Nathan Micro has appointed eight new staff members. Joining the company's printer division are: **Jackie Cahill**, sales support representative, who was formerly a specialist recruiter of computer and electronics staff; **Christine Gibson**, also a sales support representative, formerly sales office manager at Shapecut Machines; and **Malcolm Brown**, who joins from the Currys. In the micro division, four sales people will take care of national accounts: Peter Kelly, who will deal with the Midlands, joins from Rank Xerox; Bill Linder, who will look after the North of England, was formerly with Texas Instruments; and **Keith Pye** and **Mark Robinson** will take on London and the South of England. Pye was previously with Case and Robinson formerly sold specialist communications equipment. Sales support representative is **Jan Sanderson**, who was formerly with Texas Instruments and Randall Electronics.

■ **Sir David Phillips**, professor of molecular biophysics at the University of Oxford, has been named chairman of the Advisory Board for the Research Council (ABRC). He will succeed Sir Alec Merrison who has held the post since 1979. The ABRC advises the Secretary of State on the allocation of the science budget and on civil service matters generally, with particular reference to the research council system.

■ Ex-Department of the Environment Systems analyst **Pat McGrane** (above) has joined Grundy Business Systems as systems advisor for the NewBrain portable microcomputer. He will be helping systems houses and OEM customers to use the NewBrain in a variety of business, scientific and educational applications.

■ **Ed Baumoat** has been appointed regional sales manager with special responsibility for France at Vermont Research. **Paul Callus** has been named regional sales manager to increase coverage of the UK market, and to work in Scandinavia.

■ The newly-formed European subsidiary of Digital Research has appointed **Allan Davies** as sales manager for the UK, Ireland and Scandinavia. He joins the company from Tektronix Europe in Amsterdam, where he was responsible for graphics products software marketing.

■ **Mike Banahan** (above) has been appointed senior lecturer/consultant by UTC, a Unix training company which is part of the Span Group. He has spent the last four years as a lecturer at the University of Bradford, where he was responsible for the installation and maintenance of Unix. At UTC Banahan will be lecturing in Unix and C in a series of public and in-house courses.

■ **Peter Smith** is to head the new secure systems division of Systems Production, based in Gloucester. He also becomes a director of Systems Production. Smith, who is a major in the Territorial Army, joined the group in 1979.

■ Epson UK has made five new appointments. **Ray Bennet**, sales manager for LCD and mini printers, has joined the company from Mars Money Systems where he was a project engineer. Marketing services manager is **Robert Stead**, formerly sales director with Lowe Electronics. Joining the company as software development manager is **Ian Phipps**, who was previously with Hugin and Honeywell. **David Manuel** has been appointed Epson's training manager for dealers and distributors. He was formerly with Wordplex, where he was analyst training manager. **Dan Diehens**, formerly an Apple salesman, has joined Epson as computer sales manager.

■ Three area sales managers have been appointed at Decision Data (GB). **Paul Perera**, who will work in the Southern Home Counties and South-west London, joins from Nashua, where he was a regional sales manager. **Martin White**, who will deal with the Midlands, South Wales and Northern Home Counties, was previously with Storage Technology. Area sales manager for London West and the Western Counties is **Mike Jennings**, who was previously in sales with Transdata.

■ **Philip Wade**, previously of Dulux Paints, has been appointed a director of Propafloor, which manufacturers raised access flooring for offices and computer centres.

■ **Errol Mason** has joined the newly-formed WordNet Engineering Sources UK as managing director. He was previously technical support engineer at Jaecrow Systems Services.

■ Perkin-Elmer Data Systems' Northern branch manager **Keith Reynolds** has left the company's Hale office to join its Australian operation. Reynolds, who will be based in Perth, joined Perkin-Elmer as division manager of memory product and terminal sales in 1978.

■ Advanced Software Technology has appointed David Scott as UK marketing co-ordinator. He joined the company from Turner Electronics where he worked for five years in the marketing department.

DIARY

JANUARY 20

Auditing guidelines. EDP Auditors Association. Little Ship Club, Bell Wharf Lane, London, EC4. 5.30.

Distributed Computing in a local authority. BCS Newcastle branch. Ellison Building, Newcastle Polytechnic. 6.30.

Computer assisted design – as used by the Ford Motor Company. IDPM Essex branch. County hotel, Rainsford Road, Chelmsford, 8.00.

JANUARY 26

A screen management facility for Cobol. BCS Cobol group. BCS Headquarters, Mansfield Street, London. 2.15.

Computers in health care. BCS Coventry branch. N Block, Coventry (Lanchester) Polytechnic. 7.30.

FEBRUARY 1

Computer security workshop.– NCC. NCC, Oxford road, Manchester 1. 9.00. Details Sheila Wilkinson on 061-228 6333.

FEBRUARY 2

A view of networking – demands and growth in networks, their size and distance, rewards and perils. IDPM Sussex branch. American Express, 154 Edward Street, Brighton. 7.00.

FEBRUARY 9

Mercury – the alternative to British Telecom. BCS Kingston Branch. Kingston Polytechnic, Kingston-upon-Thames, Surrey.

CONFERENCES

■ **THE Status Users Group** is holding a conference on the capture and presentation of textual information at the Lancashire County Cricket Club, Old Trafford, Manchester on March 24. Status is a free text retrieval package. The conference will take the form of workshops with sessions covering word processor/office system links to Status; optical character recognition for text input; practicalities of input of large volumes of text to produce large database; use of report generators to prepare specialised outputs; and use of Status in conjunction with other application programs. Details from J. Hetherington on (0532) 737475.

■ **VIEWDATA** – the Competitive Technology is a seminar for managers and computer professionals who wish to review viewdata against a current business problem. It is also suitable for computer manufacturers' senior staff who wish to take a broader perspective of the viewdata marketplace, says organiser Langton Information Systems. The seminar will be held in London on February 1-2 and again in October and in Edinburgh on June 28-29. Fee including VAT is £230. The programme includes a definition and background of the technology, terms and concepts and looks at the future for viewdata. Details on 01-434 1031.

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COMPUTER FINANCING

High technology – the new darling of the City

About two dozen computer firms have gone public. Nick Goodway reports

THE growing number of computer companies going public has attracted some scepticism and a lot of envy from others in the industry. But it looks as though investors can't get enough of the high technology action and will pay sky-high prices for companies which don't pay dividends and in some cases are still making losses.

There are now some two dozen computer companies which have gone public. That means their shares are traded on the London Stock Exchange. All but a few (ICL, Act and Case) have appeared in the last two years on the Unlisted Securities Market (USM) – baby brother of the main market.

There are a number of reasons for going public. The initial sale of shares can both raise extra money for the company and give the current owners a chance to realise part of their investment. Many companies make it a mixture of both.

Once the shares are on the market they have a daily value. This means a quoted company can use its own paper to make acquisitions. Applied Computer Techniques (Act), which came on the market in March 1979, acquired another smaller Birmingham company in August of the same year. The company, Computer Proof, had just made an annual profit of £114,000 but Act paid only £95,000 cash for it. The rest of the price was made up of £300,000 Act shares which were then trading at 200p.

Since then, Act has taken further advantage of its Stock Market listing by having a rights issue. That's when a quoted company asks its existing shareholders to stump up new money by buying new shares in proportion to their existing stakes.

There are plenty of ways of going public.

Firstly, there are two Stock Exchange markets. The main one is the market in listed securities which has existed for over two hundred years. It includes the shares of nearly all big British companies. But two years ago, the Stock Exchange set up the Unlisted Securities Market (USM). This is controlled in much the same way as the main market but has less demanding entry requirements.

The USM was set up both to attract smaller companies than usually come to the main market and to attract the sort of entrepreneurial talent which the main market was often sorely lacking. It began in October 1980 with only 11 companies, but after a gentle start business really began to take off so that now there are about 140 companies quoted on it with a combined value of over £1.0 billion. In 1982 investors' interest in the USM soared taking share prices with it.

The popularity of the USM looks like growing in 1983.

There are two major attractions for a company in coming to the USM rather than going for a full listing. The task is less arduous and cheaper. And only 10% of the company's equity has to be sold to the public rather than the 25% minimum on the main market.

Many computer companies also find that the minimum of three years' profit record is easier than the full listing's five. There are even cases when companies can come to the USM without any trading record.

It takes somewhere between six and nine months to get from the decision to go public to the first day the shares are traded on the USM – and it won't be an easy period. The first move is finding a merchant bank which will act as the company's adviser on all the details and co-ordinate the team of auditors, solicitors, stockbrokers etc involved in going public.

They will then crawl all over the company and its books ensuring its suitability for public ownership. But one of the worst ordeals the directors will probably have to go through is making a profit forecast and living with it for those first few months.

There are two main methods of going public. The offer for sale used to be the most common method. In this, the merchant bank buys the shares from the company (either from existing shareholders or buying new shares) and then offers them to the public through advertisements and by publishing a prospectus.

The shares are offered either at a fixed price or, as in the recent Britoil offer, by tender, getting investors to value the shares themselves. However, on the USM the other [illegible] popular.

This is where the merchant bank and stockbroker sells shares to its own clients at a fixed price. Less advertising is needed but if new shares are being issued a prospectus is published.

Two other methods exist but are far less common. An introduction is when the Stock Exchange permits dealings to start in a company whose shares are already widely held (over 200 shareholders). A re-introduction takes place after a company whose shares are already quoted makes a reverse takeover of a larger or very different company. In both these cases just as much information has to be disclosed about the new company.

If going public involves the issue of new shares (which it almost always does) a prospectus has to be published. There are slight differences in what the prospectus must contain between the USM and a full listing but the main requirements are similar.

The prospectus contains the issued capital of the company, its registered address and its directors. It has a brief description and history of the company. With computer companies and all techinical companies it is important to include a good non-technical description of the main business.

The most difficult part of the prospectus is the section on prospects, dividends and profits. This will be the directors' responsibility even though the professional advisers will check out any forecasts very carefully. Failing to meet a forecast is probably one of the gravest sins in the eyes of the investors.

On the main market a company has to provide the last five years accounts and balance sheets with an accountants report. This is not required on the USM but nonetheless those companies which can usually provide just as much information.

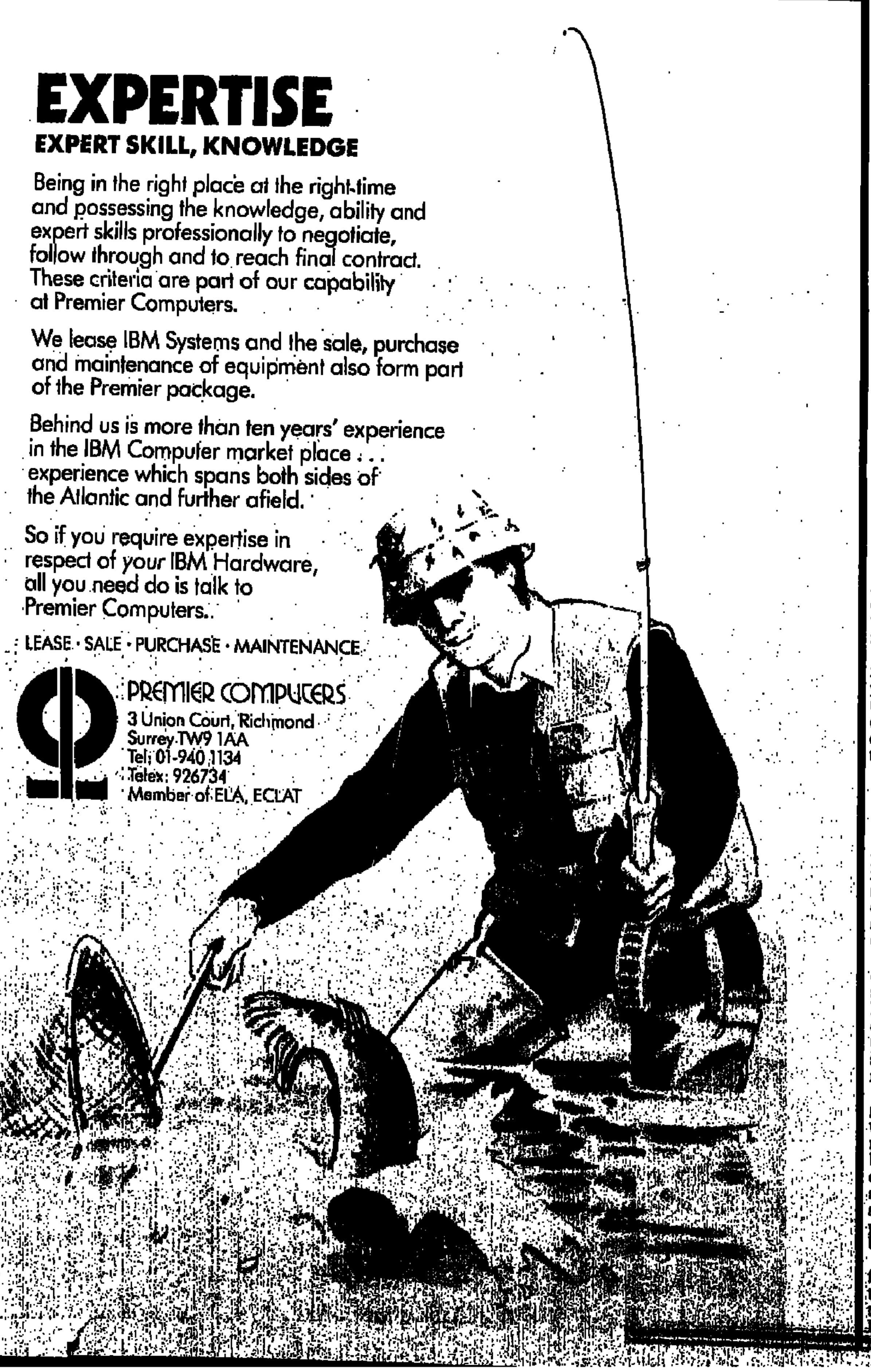
The prospectus also includes the directors' shareholdings and any other large holdings as well as details of both directors' service contracts and other major material contracts the company has.

Finally the company will sign either a Listing Agreement or, on the USM, a General Agreement for the Stock Exchange. This basically says the company will keep shareholders informed of any developments which could affect its share price, prepare a half-yearly and annual report, send the Stock Exchange copies of documents sent to shareholders and pay an annual fee to the Stock Exchange. That is £1,000 on the USM and up to £2,700 for a full listing. Incidentally it also costs a company £600 a year to have its price published daily in the Financial Times.

The cost of going public can vary greatly. A full listing is generally reckoned to take about four per cent of the money being raised with a minimum of £150,000. The USM was designed to be cheaper but has turned out dearer than was originally hoped at an average cost of about £100,000.

But remember it is really the new shareholders who will pay that, and at the moment there still seem to be plenty of cash-rich investors who want to put their money into computers. Go out and get them.

Nick Goodway is technology correspondent for the Investors Chronicle.



Many bank managers are completely lost when it comes to technology. John Campbell looks at sources of finance

If at first you don't succeed – try ICFC

ANY entrepreneur embarking on the quest for financial backing makes his local bank manager the first port of call. The computer man will be no exception. But he should be aware, before he starts, that he may well encounter additional difficulties to those faced by his counterparts in more traditional businesses.

Often, the trouble is purely local. Many bank managers, skilled though they may be at assessing the risks and potentials surrounding, say, retailing propositions, are completely at sea when presented with ideas based on unfamiliar technology.

Ill-equipped to judge their feasibility, many will take the course of least resistance and (as all prudent bankers should) err on the side of caution.

Of course, there are bankers and bankers (most managers have considerable discretionary power over their own lending) – and there's nothing to stop the would-be entrepreneur shopping around. He might strike lucky fairly quickly; but for many, hawking their pride and joy from one blank face to another can prove pretty soul-destroying.

One high-tech entrepreneur was met by a seemingly endless string of refusals as he tried to gain backing for a promising, and highly-researched scheme for manufacturing fibre optic car ignition systems.

> **'The smaller private venture capital organisations can, at present, afford to be ultra-choosy – and none is being starved of opportunities in the computer field. Getting finances from such sources is a highly competitive business – and is likely to remain so for some time'**

Not until he reached London did he get anything like a positive response. Even then, approaches to some 30 potential sources of finance produced just three offers of help.

One would have been enough, of course – and the moral for those with unshakeable faith is to keep knocking on doors until one finally opens.

Overall, though, private loan financing of high technology enterprises isn't one of Britain's greatest success stories. A recent report carried out for City fund managers GT Management (and partly-funded by the Department of Industry), suggests that the problems lie deeper than the technological ignorance of individual bank managers.

The ingrained bias towards secured lending, for example (as opposed to that based on cash flow projections), works heavily against enterprises long on earnings potential but short on tangible assets. Schemes based on the development of software are obvious potential victims.

To its credit, the government (ideologically committed to "new" industries, of course) has done its bit to tackle this specific problem. The "Loan Guarantee Scheme", under which the government takes 80% of the risk on its own shoulders, has benefited thousands of firms. That said, banks are obliged to judge propositions according to "commercially prudent" criteria – and there have been some horror stories of technologically-advanced concerns attempting to use the scheme still being thwarted by the banks' conservatism.

In any case, with the borrower forced to pay an "insurance" premium, the scheme is no source of cheap finance [illegible]

Private equity financing, though sometimes only resorted to with reluctance, is in a rather healthier state.

Still dominating the scene – and the most likely destination for anyone not referred to the banks' own equity finance subsidiaries – is the mighty Industrial and Commercial Finance Corporation (ICFC). Set up at the end of the last war with £45 million and still 85% owned by the major clearing banks (the Bank of England has the rest), ICFC now invests over £100 million annually. That makes it the biggest single source of development capital in the world.

ICFC does lend – and was one of the first participants in the Guaranteed Loan Scheme. But the bias remains towards capital investment. Of the 3,750 enterprises under its wing, the Corporation holds equity stakes in about 2,000

ICFC's remit, of course, is wide-ranging – and there's no discernible bias towards high technology.

There's more "development" than "venture" capital, too, though there are signs of a more adventurous approach beginning to take root. Last year, for instance, the Corporation financed 305 start-ups and a further 440 enterprises which had been trading for less than three years.

Technical Development Capital (TDC), established two years ago, is a sister organisation of ICFC – though, as yet, very much a minnow by comparison.

TDC specialises in providing venture capital for high technology entrepreneurs. The 20 companies under its wing include computer peripheral and automated office equipment manufacturers, software houses and instrumentation specialists.

TDC's approach (unlike ICFC's) is firmly "hands on", offering its clients a venture capital package along American lines. In return for a sizeable equity stake, the organisation provides considerable technical and managerial assistance, maintains close contact with relevant technological developments in the US, and generally works hard to see its protègès through to maturity.

Not for entirely unselfish motives, of course. Out of each 10 investments, TDC would expect to see four trial – and to make a return commensurate with the risk involved, has to see at least two turn into clear winners.

TDC is only one of a group of City institutions, including Barclays, Citicorp and Prutec (among others), which collectively form the Finance for Industry group, an organisation taking a particular interest in new firms with ideas to exploit the latest technological developments.

Other big City institutions with long-standing expertise in small business finance include Charterhouse, Gresham Trust and Electra Investment Trust.

The past year, too has seen a number of new, smaller, and generally more aggressive venture capital operations arrive on the scene. One, APA Venture Capital Fund, set up by Ronald Cohen (who believes the UK venture capital market is still thoroughly immature) maintains close links with both UK and US institutions.

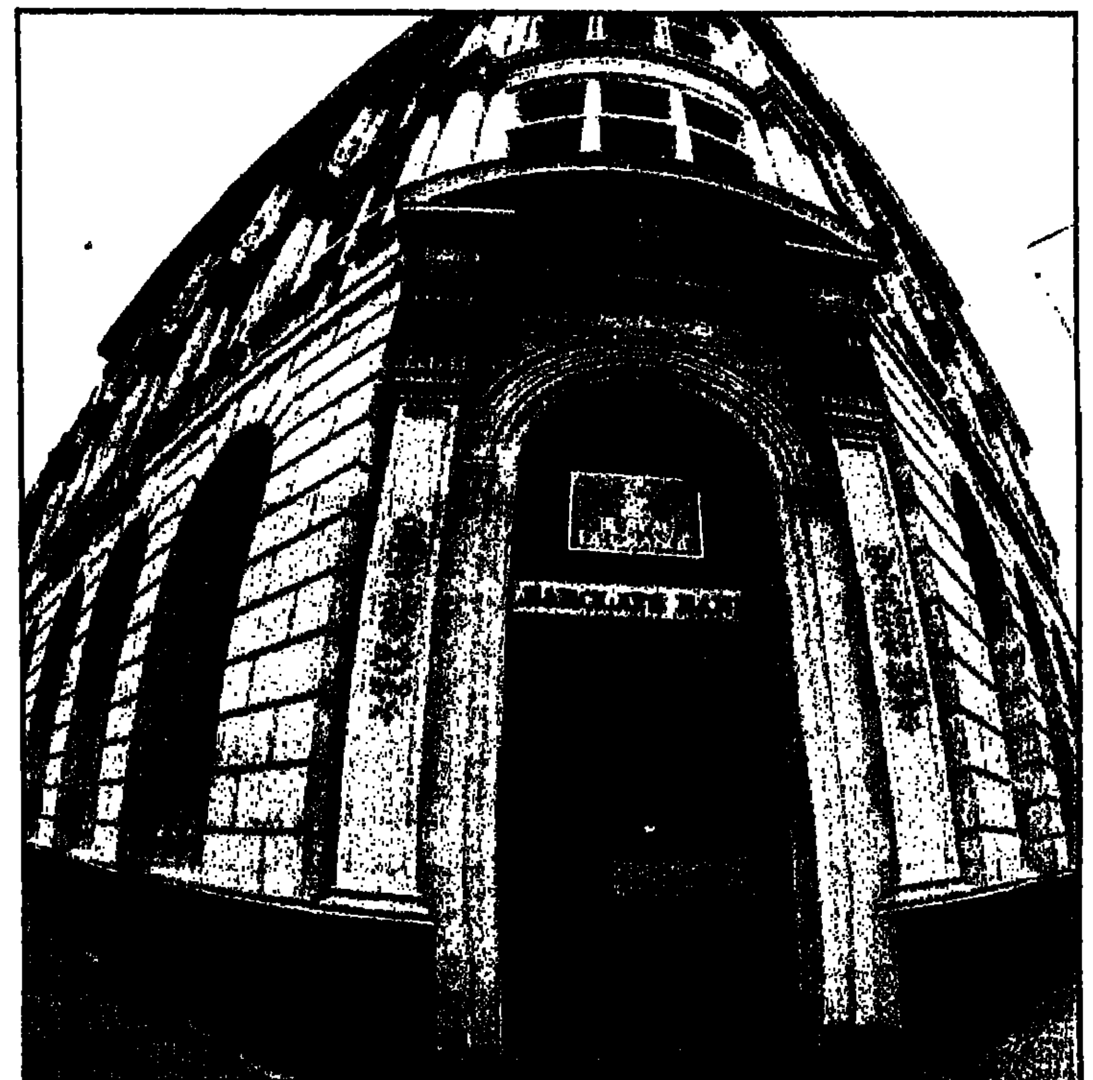
There have also been some interesting link-ups between financial institutions and the universities. One such, Advent Eurofund, was set up in August, a joint venture between US multinational Monsanto, UK finance houses, and a consortium of British universities. A sister organisation of Advent Technology, the Eurofund's brief is to develop suitable European companies to the point where they can mount an assault on the electronics markets.

The smaller private venture capital organisations can, at present, afford to be ultra-choosy, and none is being starved of opportunities in the computer field. Getting finance from such sources, then, is a highly-competitive business – and is likely to remain so for some time.

Most would-be computer entrepreneurs should face the fact that they will probably have to rely, after all, on the banks or ICFC to finance their dreams.

Nothing ventured, nothing gained, of course. Remember that the government operates a Small Firms Service which can offer much useful advice on the opportunities currently available. Freefone 2444 is the number to call.

John Campbell is investment finance correspondent for the Investors Chronicle.



The local bank manager is often the first port of call for the entrepreneur.

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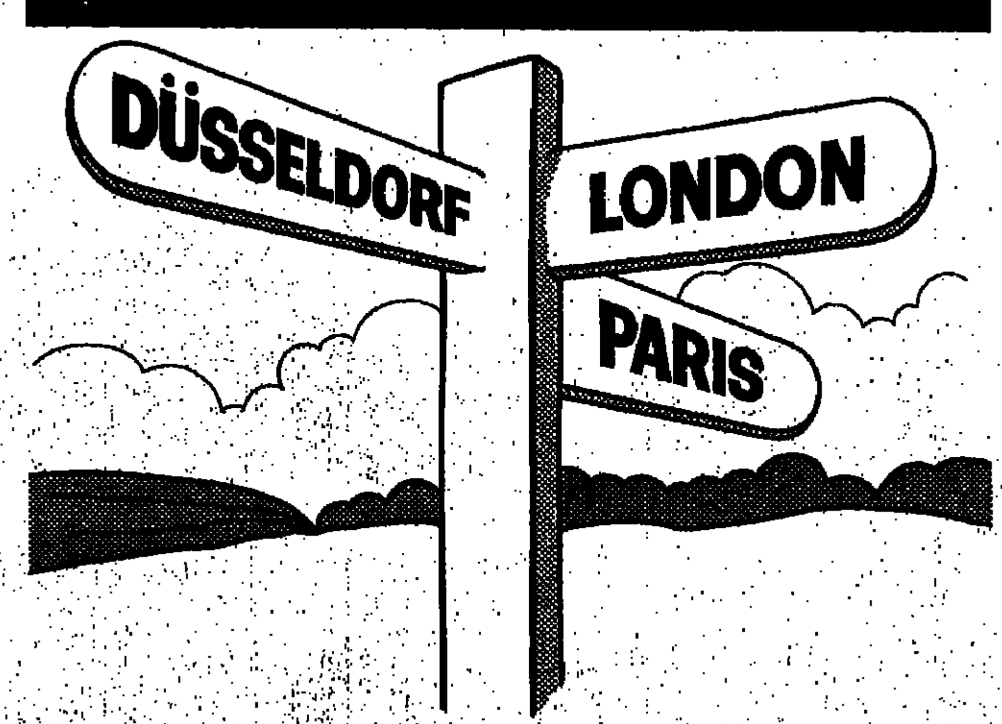

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COMPUTER FINANCING

Clearing banks are cautious advancing funds without safe guarantees. John Robertshaw examines an alternative

Taking a risk is what makes the venture capital firms tick

ROBERTSHAW . . . "A lot of money is chasing high tech companies."

IF THE search for the right kind of money to fund expansion is a perennial business hazard, it is a particularly sensitive problem in growing high technology companies. Potential financers have investors eager to place their money in what they perceive to be the industry of the future. And the businessman seeking financial backing is looking for maximum help with minimum interference.

At present, there is a great deal of money chasing the high technology company with the right product and people. Equally, in spite of the increased failure rate of computing companies, the entrepreneural start-up or large company breakaway is still very much a part of the industry scene. On the face of it, therefore, supply and demand would seem to provide something of a balance.

The fly in the ointment, of course, is the willingness of investors' financial advisers to take the plunge with the relatively new companies of which, in the main, the industry is made up. It is their goodwill and judgment which potential investees must court in order to attract an investment decision.

This goodwill is essential if the industry is to thrive. By and large, clearing banks are not in the high risk business, and are therefore necessarily cautious about advancing funds without some reasonably safe guarantees. The venture capitalist, however, is looking for capital growth rather than short-term earnings from interest, with sights set on a three to five year period rather than immediate returns.

For money to be locked up for this time requires an act of faith as well as judgment by the investor concerned, and it is important that any company seeking funds recognises this. In return for a limited amount of equity – about 20-30% depending on the level of investment – a venture capitalist will take a seat on the board from which vantage point he or she can offer advice.

However, a minority holding and one board seat does not take control from the management concerned. They have acquired an equity partner with sound business experience whose views deserve careful consideration but which cannot be imposed. The act of faith in management's ability to produce the right results is a genuine one.

Every venture capitalist knows that where unquoted companies are concerned, the failure rate in terms of return on investment will usually outweigh the successes, but that one major success will more than pay for lacklustre performance in the rest of the portfolio. The name of the game for the investor, therefore, is to be able to spot the Apple of the future and buy into it while it is still relatively cheap to do so.

He has several problems. He has to vet the technology and he has to analyse whether the company's marketing claims are justified. He has to be convinced that the people in the company are winners and only after the indicators for these three elements are positive comes the detailed examination of the business plan.

Any company seeking equity finance should consider some simple rules.

Make yourself known Any investor approached for cash will ask other people for a line on the organisation concerned. There are several ways of making yourself known, and this does not necessarily mean getting yourself talked about in the Press. Possibly more important is making friends with the financial community – making contact and informing people about your activities before you are likely to need the money.

As people become familiar with your aims and thinking, they will be more receptive to a business approach. This is exactly the tactic pursued by the financial advisers themselves – watching, listening, assembling information so that they are ready to act as opportunity presents itself.

They will therefore normally be receptive to the "informal exchange" approach and will often yield invaluable advice on how to deal with the City.

Make a sensible approach A letter and a document are obviously required, whether you make a cold approach, respond to an overture or are introduced by a third party. The document should basically show three things: that the product or service concerned is ahead of the market in terms of technology, price and competition, that you are able to control the business. Too often entrepreneurs are too immersed with the excitement of the technology or sales potential to see the financial pitfalls in front of a fast-growing business. If you can combat these doubts with a profits track record and a good order book you are assured of success.

Be patient Looking at a company to establish its viability, marketing potential and business capability takes time. By planning ahead and getting yourself known, you will help to short circuit the decision phase, but you must still allow those responsible for investing other people's money to do their job. Remember that for them it is far more important to have a modest stake in a successful company than a large percentage invested in a failure.

Recognise the value of a team All

> **The name of the game for the investor is to be able to spot the Apple of the future and buy into it while it is still relatively cheap to do so**

In the US, this attitude has meant that companies with a small profits record but great potential can be floated. Professional financiers there are far more experienced in vetting smaller propositions. In the UK the tendency is to nurse the companies along and then launch them.

This comparatively adventurous attitude by US security analysts offers excellent opportunities for British venture capitalists and therefore the competition for this money is not just restricted to other UK companies. In UCAT's (United Computer and Technology Holdings) case its US investments, taken via links established through chairman Tom Buffet, have yielded well in a comparatively short time span.

Security Tag Systems, which manufactures electronic article surveillance systems, was floated in April last year at 54p and is now selling at 440p. Cardiac Resuscitator, an investment made in May last year in convertible stock is still showing price increases in its common stock since that time.

As a result of this and other good performers in the UK and US, UCAT's own shares are now trading at 145p compared with about 70p at the beginning of 1982.

From the investment point of view, new companies are often high risk. Too often basic lessons such as the importance of establishing reliable sources of supply are forgotten in the euphoria of the marketing opportunities being presented.

The need to evaluate competition realistically and to protect the customer base by solid distribution and servicing arrangement is sometimes too low on the priorities list.

Any of these factors will cause a venture capitalist to hesitate. He or she develops a sixth sense which is sometimes wrong but more often right. Because the computer industry is still young and filled with more exciting ideas than business experience, the venture capitalist has a valuable contribution to make to emerging companies, and it is with the idea of minority partnership reaping medium term financial rewards that specialist investment trusts can help the industry's growth.

John Robertshaw is a director of United Computer and Technology Holdings.

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COMPUTER FINANCING

Government incentives spur the computer leasing industry

Peter Hunt reports on the reasons behind dramatic growth in UK leasing

AMONG the main reasons for a dramatic growth in the UK leasing industry are the incentives available to the industry from the government. This is in the way of capital allowances that are provided when a company purchases capital equipment.

Computers fall into this category. The allowances are set off against taxable income before the company's tax liability is assessed.

However, if a company does not have sufficient taxable profits to absorb all of the capital allowances, the tax benefits are delayed and their value as a result is reduced. The effect of this was even more pronounced when the interest rates were high, as was the case until early 1982.

Therefore it is an organisation's lack of ability to utilise the capital allowances that creates the incentive to lease.

Although there are several forms of lease, the two main categories dealt with here are finance leases and operating leases.

Some forms of leasing are evaluated by factors such as obsolescence and convenience. Finance leasing, however, is usually evaluated on a pure financial basis by comparing the cost of hire purchase or outright purchase.

Finance leasing determines the cost of the facility in relation to outright purchase and the relative tax-paying position of the lessor and lessee. A lessee may well be profitable but not paying tax because of his entitlement to other forms of relief. Lessors on the other hand arrange their affairs to maximise their capital allowances, and they therefore offer reduced rentals on the equipment or asset by passing on some of the benefits of their allowances to the lessee.

We will examine the subject of capital allowances again later.

An operating lease allows the lessee to terminate the agreement after a relatively short period of time without having to make sufficient rental payment to fully pay out or amortise the capital outlay that the lessor has incurred.

This type of leasing is particularly prevalent in the computer industry and more specifically the IBM computer leasing industry.

In computer leasing the lessor is in many instances a finance company. He is not necessarily the computer leasing company who puts the deal together. The financier rarely takes the residual risk and the lessee is invariably committed to what is effectively a full payout finance lease.

However, the computer broker could undertake to the lessee to make the outstanding payments to the finance company on his behalf should the lessee wish to come out of the lease early.

This looks to the lessee like an operating lease as his option allows him to lease for a shorter period than it takes to amortise the capital cost of the equipment, and the computer broker takes the risk and responsibility for the payment of the remarketing of the equipment.

There is, of course, an element of risk undertaken by the lessee as he takes a view on the likelihood of the computer broker/leasing company being around to take him out of the lease when the time comes.

In certain instances the computer broker/leasing company convinces the funder to fund him for, say five years, on a particular item of equipment and permits him to lease to a user for say, three years. In this event the user has no risk at all and any liabilities rest strictly between the equipment supplier and the main funder behind the deal.

In any event, it is the specialist who takes the risk and the lessee keeps his options open. Should everything work to plan the main advantage to the lessee is that he can more easily update his computer installation. Computer equipment in particular is subject to technological change and for this reason it is best to let the specialist take the technological and financial risk.

The lessor may be a specialist computer leasing company or the subsidiary of a substantial corporation or perhaps the subsidiary of a bank. Whatever the case, the lessor will inevitably have taxable profits or have access to it if he should only have a limited supply of capital allowances within the constraints of his own sphere of activities.

He therefore buys a computer or computer configuration and uses his taxable profits to obtain capital allowances arising from his purchase. At the same time the lessor leases the equipment to the company.

The incentive that the lessee derives from the ability of the lessor to obtain the tax shelter, is to be funded at a cheaper rate than he could obtain from a bank or even the manufacturer.

The advantage to a user depends precisely upon his current and future tax position and the capital allowances for which the computer qualifies. Many companies have found that the size of their capital investment programme is considerably greater than their current taxable income.

This does not necessarily mean that these companies are unsuccessful. Many highly successful companies, depending upon their overall current investments for future growth, are frequently in a non-taxable position.

The primary incentive being 100% first year capital allowance means that the current taxable income is reduced. However, the future rentals become income which is most definitely taxable. This is in effect deferral of tax and the value of such tax deferral increases when interest rates are high. Consequently high interest rates increase the value of leasing from the lessee's point of view.

Any organisation which is unable to take full advantage of capital allowances should seriously consider leasing. Even companies carrying forward a balance of corporation tax should consider leasing. Companies that have taxable income can profit from leasing if they can aquire an asset early in their financial year.

Some firms have used leasing as a source of financing because it does not appear on the balance sheet and could provide a form of borrowing that increases the firm's overall debt raising capacity.

Sometimes a subsidiary company, subjected to capital constraints by its parent company, uses leasing because it is not treated as capital expenditure. Bankers and financial institutions have long made it their practice to seek out information on leasing commitments.

Their financial analysts often incorporate leasing contracts to the debt portion of the balance sheets in order to assess a firm's true position.

The bank's lending and leasing decisions are often based on these types of assessments, not the balance sheets as published in the annual report.

The implications for the lessee are that since no assets are acquired nor liabilities incurred, there is no impact on the balance sheet. Cashflow is eased and the future cost projection is known. Capital is not tied up in depreciating assets and can be redirected into appreciating assets such as bricks and mortar.

The lessee hedges against inflation as future payments are cheaper over time and existing bank lines are conserved, permitting the lessee to make full use of its borrowing facilities.

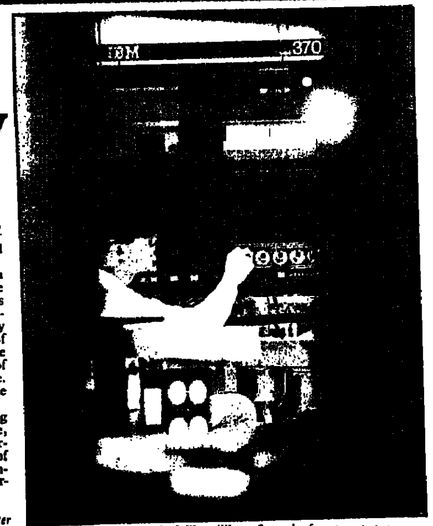
The implications for the lessor are, of course, somewhat different. The finance lessor's interest generally expires at the termination of the lease and the asset comes off the balance sheet at that time. This termination generally takes place in the form of the lessee acting as the lessor's agent and selling the equipment on his behalf, retaining say 98% of the proceeds.

Hence title never passes to the lessee and the lessor's rights to capital allowances are intact. The operating lessor, as opposed to the finance lessor, has an interest in keeping the assets on his balance sheet as long as possible. If his assessment of the residual value of the equipment is wrong and the equipment, in the extreme case, is worth little more than scrap value, it would be too embarrassing for him to scrap or sell it – it would look horrible on the books.

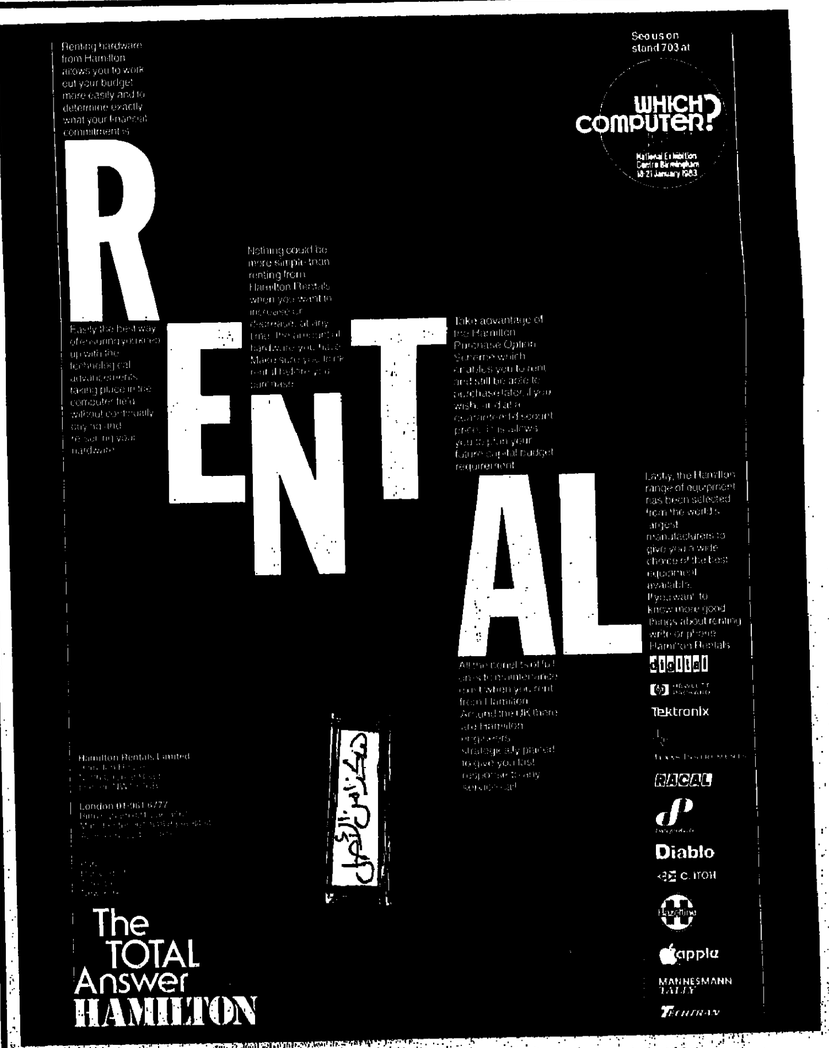
This sometimes results in a warehouse stocked with obsolete equipment probably worth less than the cost of storing that equipment. The equipment may however look like millions of pounds of assets on the balance sheet, giving the impression of substance where there is none. Massive portfolios can therefore be misleading.

It is reasonably clear that so long as investment incentives continue, firms will have the ability to generate capital allowance in excess of taxable income. For such companies leasing provides an important investment incentive.

Peter Hunt is chairman of Computer Financing International.



Obsolete equipment may look like millions of pounds of assets on paper.



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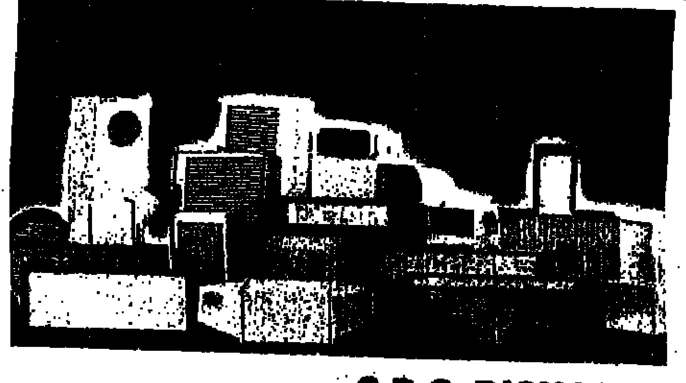

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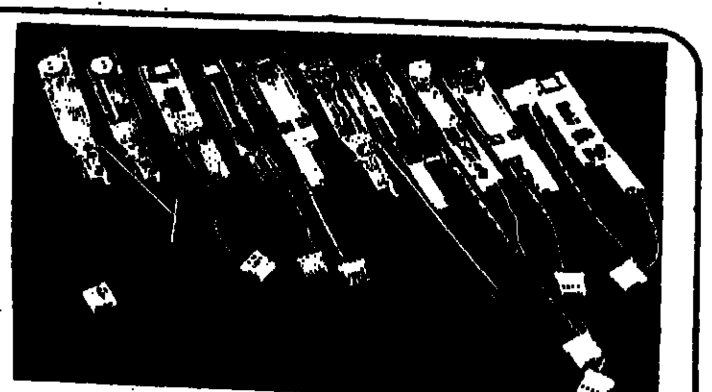

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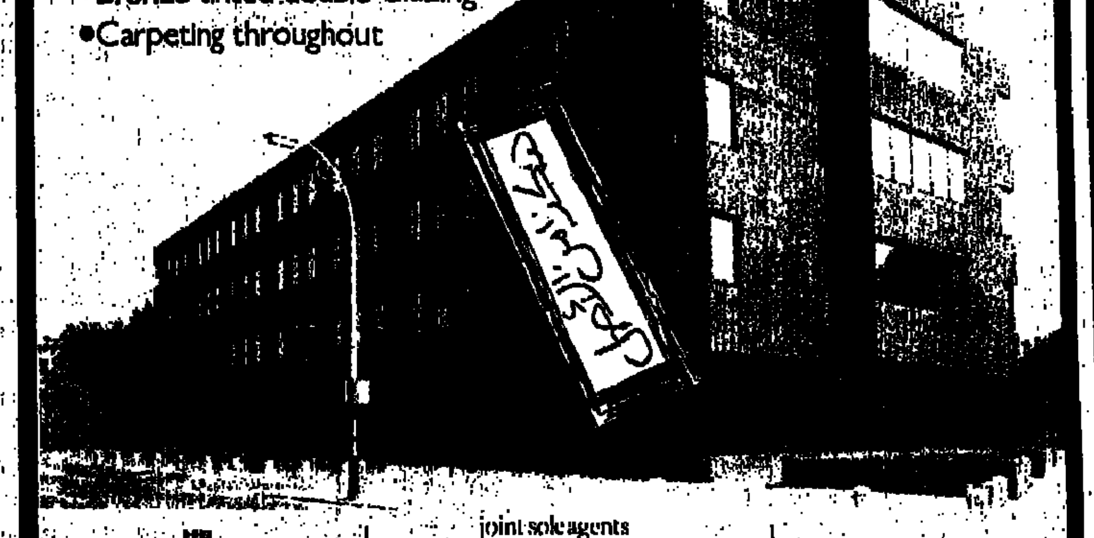

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Cobol users stay loyal amid general flux

A closer look into results of the CW/Datapro survey, by John Riley, shows how Cobol has stayed on top of the market for mini and mainframe software

LAST week, *Computer Weekly* reported users' satisfaction with their mainframe and minicomputer systems. This week we look more closely at how users are using these systems, using the results of the same 1982 Computer Weekly/Datapro survey (see figure 1).

In the survey, users were asked to state their primary programming language, the sources of their applications programs, and the principal applications to which their systems are put.

A comparison of these results with those of last year holds few surprises, but the trends provide an important indication of the overall direction which the industry is taking in these areas.

Cobol remains the main programing language among both mainframe and minicomputer users, while Basic and RPG have lost ground overall. Fortran has made gains in both sectors.

Among the mainframe users, Cobol predominates, being the primary language for 70.9% of the 321 user responses. While there has been a slight increase in the use of Assembler languages and Fortran, PL/I, RPG and Basic are all down on last year (Figure 2).

The decline of PL/I and RPG is largely the result of a big drop in their use by IBM users. The use of PL/I by IBM users fell from 24% in 1981 to 13% in 1982, and RPG use fell from 6% to 3%.

Fewer ICL users backed Basic (the proportion of ICL users dropped from 5.2% to 2.4%) as did fewer from the miscellaneous sector (down from 16.7% to 4%), causing an overall slide for Basic from 2.9% to 1.3%.

Both IBM and ICL mainframe users reported an increase in their use of Fortran as their primary language, and the slight rise in the use of Assembler languages results from a 4% increase by miscellaneous users. Cobol was used more by all users, except those of Burroughs and Amdahl.

Name of manufacturer	User-responses* (minimum of 4) 1982	(1981)
MAINFRAMES		
Amdahl	7	(3)
Burroughs	9	(27)
Digital Equipment	5	(7)
Honeywell	27	(35)
IBM	130	(101)
ICL	83	(77)
NCR	14	(22)
Univac	21	(25)
Others	25	(17)
Total Sample Sizes	321	(314)
MINICOMPUTERS AND SMALL BUSINESS SYSTEMS		
Burroughs	37	(16)
CMC	7	(14)
CTL	5	(10)
Data General	32	(29)
Data point	12	(4)
DEC	101	(110)
GEC	4	(4)
Hewlett-Packard	33	(32)
Honeywell	28	(40)
IBM	104	(112)
ICL	98	(125)
NCR	14	(22)
Nixdorf	6	(n/a)
Perkin-Elmer	4	(3)
Philips	4	(8)
Prime	18	(26)
Systime	18	(16)
Texas Instruments	11	(6)
Wang	7	(5)
Others	90	(64)
Total Sample Sizes	633	(646)

*N.B. Results based on fewer than eight responses are of interest but for statistical purposes should be treated with caution.

Number of participants in

Overall, fewer minicomputer users obtained their programs from manufacturers' personnel, although ICL and Burroughs users went against this trend by small percentage increases.

The ranking of applications of users' machines remained broadly the same as last year, with accounting top of the list. Some 78.8% of mainframe users and 72.5% of minicomputer users used their computers for accounting, and this represents a small increase over the year.

Payroll and personnel functions have slipped slightly in the mainframe and minicomputer sections. Payroll and personnel applications are less used on minicomputer systems: order processing and inventory control come above them, with a 5% increase from 52.9% to 57.7%.

Increases have also been reported in sales/distribution and purchasing.

There was a 5% increase in manufacturing applications by minicomputer users, but a slight drop by mainframe users.

On the other hand, scientific and banking applications are down among all users, the most significant drop occurring in banking. There was about a 4% decrease among all users.

Primary Programming Language

Manufacturer	Assembler 1982	(1981)	Basic 1982	(1981)	Cobol 1982	(1981)	Fortran 1982	(1981)	PL/I 1982	(1981)	RPG 1982	(1981)	Other 1982	(1981)
Amdahl*	0.0	(0.0)	0.0	(0.0)	28.6	(33.3)	28.6	(0.0)	42.9	(33.3)	0.0	(0.0)	33.3	(0.0)
Burroughs	0.0	(0.0)	0.0	(0.0)	66.7	(88.9)	11.1	(0.0)	0.0	(0.0)	11.1	(11.1)	11.1	(0.0)
DEC*	0.0	(0.0)	20.0	(42.9)	0.0	(0.0)	80.0	(57.1)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
Honeywell	0.0	(0.0)	0.0	(2.9)	96.3	(91.2)	3.7	(5.8)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
IBM	4.7	(13.0)	0.0	(0.0)	61.2	(53.0)	3.1	(2.0)	13.2	(24.0)	3.1	(6.0)	4.7	(1.0)
ICL	0.0	(1.3)	2.4	(5.2)	83.1	(88.3)	4.8	(2.6)	1.2	(0.0)	1.2	(0.0)	7.2	(2.6)
NCR	0.0	(0.0)	0.0	(0.0)	71.4	(59.1)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	28.6	(36.4)
Sperry Univac	14.3	(20.0)	0.0	(0.0)	81.0	(76.0)	0.0	(0.0)	0.0	(0.0)	4.7	(4.0)	0.0	(0.0)
Others	4.0	(0.0)	4.0	(16.7)	72.0	(33.3)	12.0	(16.7)	4.0	(0.0)	0.0	(0.0)	4.0	(33.3)
Total (321 responses)	7.2	(6.1)	1.3	(2.9)	70.9	(68.3)	5.9	(5.4)	6.9	(9.0)	2.2	(3.2)	5.6	(4.5)

*Fewer than 8 user responses.

Figure 2: Primary programming languages – mainframes.

The increase in the use of the scientifically oriented language, Fortran by minicomputer users is due in part to more use by Data General (up to 34.4% from 17.2%), Hewlett-Packard (27.3% from 15.6%) and DEC (20.8% from 18.2%) users.

It has not been easy to account for this increase, but a factor in the change may be that more responses came from users of these three companies' machines who were in the chemical/petroleum and engineering/scientific industries than last year.

The overall number of RPG users is slightly down, from 20.8% in 1981 to 19.6%. Those who are using RPG less include users of IBM (down to 93.3% from 96.4%), ICL (down to 13.4% from 16%) and Texas Instruments (9.1% from 16.7%) minicomputers and small business machines.

Basic has lost support from all minicomputer users except ICL users, and is down overall from 18.6% to 15.9%. A general drop was also reported in the use of assembly languages (from 8.4% to 5.6%).

Users were asked, for the third year running, about the sources of their applications programs and their replies show an overall increase over the three years for most sources (Figure 4).

The number of applications programs written by in-house personnel remains extremely high among mainframe users (95.3%) and is high with minicomputer users (75.7%). In both cases the figure has remained constant over the past three years, although a slight drop is recorded among mainframe users.

The general health of the industry is attested by the steady general increase in the relative number of programs from other sources.

There has been a small increase in the incidence of contract programming in both mainframe and minicomputer sectors, and an increase in the number of proprietary software package purchases, up nearly 20% since 1980 among mainframe users and about 10% by minicomputer users.

The number of "ready-made" programs bought from the manufacturer has increased by 15% over last year in the mainframe sector. More than double the number of Honeywell and NCR users report obtaining programs from this source in 1982 compared with 1981, and the figure among IBM users has risen from 30% in 1981 to 36%.

Datapro will publish the complete results of the survey in a report, British User Ratings of Computer Systems. Copies of the report, at 50 Swiss francs each, may be ordered from Datapro Service S.A., CH-1164, Buchillon, Switzerland.

Manufacturer	Assembler 1982	(1981)	Basic 1982	(1981)	Cobol 1982	(1981)	Fortran 1982	(1981)	RPG 1982	(1981)	Other 1982	(1981)
Burroughs	0.0	(6.3)	0.0	(0.0)	94.4	(81.3)	0.0	(0.0)	0.0	(6.3)	5.6	(6.3)
CMC*	0.0	(0.0)	85.7	(100.0)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	14.3	(0.0)
CTL*	0.0	(0.0)	0.0	(20.0)	100.0	(60.0)	0.0	(10.0)	0.0	(0.0)	0.0	(10.0)
Data General	0.0	(10.3)	21.9	(27.6)	70.6	(27.6)	34.4	(17.2)	0.0	(0.0)	3.1	(17.3)
Datapoint	0.0	(25.0)	0.0	(0.0)	9.1	(0.0)	0.0	(0.0)	18.2	(0.0)	72.7	(75.0)
DEC	5.0	(7.3)	41.6	(47.3)	5.0	(5.5)	20.8	(18.2)	0.0	(0.0)	27.7	(20.9)
GEC*	0.0	(25.0)	25.0	(25.0)	0.0	(0.0)	50.0	(25.0)	0.0	(0.0)	25.0	(25.0)
Hewlett-Packard	0.0	(0.0)	3.0	(3.1)	48.5	(71.9)	27.3	(15.6)	6.1	(3.1)	12.1	(6.3)
Honeywell	0.0	(0.0)	0.0	(5.1)	92.9	(92.3)	0.0	(0.0)	7.1	(0.0)	0.0	(0.0)
IBM	0.0	(0.0)	1.0	(2.7)	4.8	(0.0)	0.0	(0.0)	93.3	(96.4)	1.0	(0.0)
ICL	18.6	(22.4)	1.0	(0.0)	62.9	(55.2)	0.0	(0.0)	13.4	(16.0)	4.1	(5.6)
NCR	0.0	(0.0)	0.0	(4.6)	100.0	(90.9)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
Nixdorf*	0.0	(n/a)	100.0	(n/a)	0.0	(n/a)	0.0	(n/a)	0.0	(n/a)	0.0	(n/a)
Perkin-Elmer*	0.0	(33.3)	0.0	(0.0)	75.0	(66.7)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)
Philips*	25.0	(12.5)	0.0	(0.0)	50.0	(50.0)	0.0	(0.0)	0.0	(0.0)	25.0	(25.0)
Prime	0.0	(0.0)	5.6	(15.4)	38.9	(23.1)	55.6	(57.7)	0.0	(0.0)	0.0	(3.9)
Systime	0.0	(0.0)	88.9	(93.8)	0.0	(0.0)	0.0	(0.0)	0.0	(0.0)	11.2	(6.3)
Texas Instruments	9.1	(0.0)	0.0	(0.0)	72.7	(83.3)	0.0	(0.0)	9.1	(16.7)	9.1	(0.0)
Wang*	0.0	(0.0)	0.0	(20.0)	100.0	(60.0)	0.0	(0.0)	0.0	(20.0)	0.0	(0.0)
Others	10.2	(4.4)	18.0	(26.1)	(11.9	(8.7)	(12.9)	(26.1)	4.9	(0.0)	59.8	(34.8)
Total (633 responses)	5.6	(8.4)	15.9	(18.6)	32.4	(32.3)	9.9	(8.8)	19.6	(20.8)	11.6	(10.3)

*Fewer than 8 user responses.

Figure 3: Primary programming languages – minicomputers and small business systems.

Sources	Mainframes 1982	(1981)	[1980]	Minicomputers & SBC's 1982	(1981)	[1980]
In-house personnel	95.3%	(97.4%)	[97%]	75.7%	(75.8%)	[76%]
"Ready-made" programs from the manufacturer	51.4%	(35.6%)	[47%]	40.4%	(33.6%)	[27%]
Proprietary software packages	52.6%	(46.8%)	[34%]	35.9%	(33.5%)	[27%]
Contract programming	32.7%	(29.8%)	[26%]	35.9%	(33.5%)	[26%]
Manufacturer's personnel	9.7%	(9.0%)	[7%]	6.3%	(7.4%)	[9%]

Figure 4: User rankings of sources of application programs.

Both Basic and RPG appear to have lost ground to Fortran.

How the survey was organised

QUESTIONNAIRES were sent to 5,000 of *Computer Weekly*'s subscribers in September.

The objective was to gather pertinent information about each system, such as: method of acquiring the computer, date of installation, the number of remote/local workstations, location of the computer, disc storage and memory, capacity, and integrated word processing functions.

We also elicited information about the user's operation, such as: type of industry, principal applications, source of applications programs, primary programming language used, and acquisition, implementation and replacement plans for the next 12 months.

The real core of our survey, however, is the section where users are asked to indicate the advantages and disadvantages of their systems; to rate various aspects of their system, its software and vendor support; to evaluate how much, if at all, the system lived up to their expectations; and to make recommendations to other users.

Be aware that responses may be coloured by individual variations in expectations, different applications, the operations environment, and the quality of service and support provided by the vendor's branch office.

Also bear in mind that technical support, software and/or peripheral equipment may have been obtained from outside sources.

Computer Weekly sent 5,000 questionnaires to a random sample of subscribers. A total of 1,041 were returned, initially screened and forwarded to Datapro for further processing.

At least four responses were required for a model to be individually featured in our tables. Most models without the required number of responses were included, however, in more general categories, such as: "other models" or "other vendors". A few could not be combined with others and were rejected.

Of the 954 responses that we used, 321 evaluated mainframes, and 633, minicomputers.

Participating in the survey were 928 users. Of these, 47 rated 2 models, 23 rated 3, 5 rated 4, and one rated 6. Each model in these cases was rated on a separate copy of the questionnaire.

Weighted averages were computed in a manner similar to college grading systems: "Excellent" was weighted as 4. "Good" as 3, "Fair" as 2, and "Poor" as 1. Each rating was multiplied by the corresponding weight, and the average was taken by dividing the sum of the products by the number of responses for that category.

The first group of questions asked the users to identify the manufacturer and model, the month and year of acquisition, and the method of acquisition.

A second group asked the users to identify their type of industry, their principal applications, and their source(s) of applications software.

A third group inquired about the hardware and software configurations, about any acquisitions or implementations planned for the coming year, and whether replacement or expansion of the computer systems was planned for the coming year.

Next, users were asked to rate their systems on: ease of operation, reliability of the mainframe, reliability of the peripherals, maintenance service (responsiveness and effectiveness), technical support (troubleshooting, education, and documentation), manufacturer's software (operating systems, compilers and assemblers, and applications programs), ease of programming, ease of conversion, and overall satisfaction.

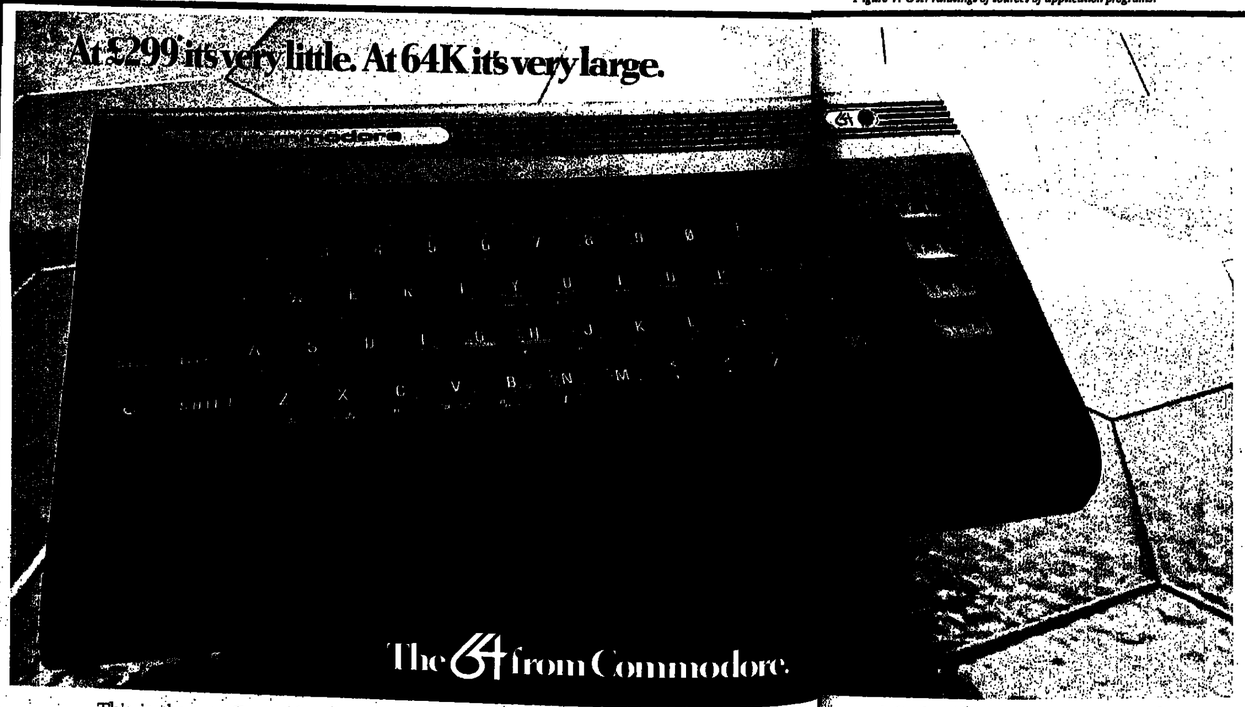
Summaries of responses in this area have been presented as weighted averages.

Finally, we asked whether the computer systems did what they were expected to do, and whether the users would recommend their computer systems to other users.

Results of these subjective ratings are presented only where at least three users responded.

Application	Mainframes 1982 Sample: 321	(1981) (Sample: 312)	Minicomputers/ SBC's 1982 Sample: 633	(1981) (Sample: 645)
Accounting	78.8%	(74.4%)	72.5%	(69.0%)
Payroll/personnel	62.0%	(63.1%)	44.9%	(46.7%)
Order processing/ inventory control	55.8%	(52.2%)	57.7%	(52.9%)
Sales/distribution	40.8%	(40.1%)	42.7%	(41.4%)
Purchasing	39.8%	(34.3%)	41.7%	(38.3%)
Manufacturing	28.0%	(28.9%)	24.2%	(19.2%)
Other	24.9%	(22.4%)	28.3%	(28.2%)
Engineering/scientific	23.4%	(23.7%)	13.7%	(14.6%)
Mathematics/statistics	23.4%	(25.3%)	13.1%	(14.3%)
Banking	14.3%	(18.0%)	7.4%	(11.5%)

Figure 5: Principal applications of users' equipment.



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2. Interface adaptors will allow the use of a complete range of hardware peripherals including disk units, plotter, dot matrix and daisy wheel printers, Prestel communications, networking and much, much more.

3. A complete range of business software including word processing, information handling financial modelling, accounting and many more specific application packages will be available.

4. Other computer languages such as LOGO, UCSD PASCAL, COMAL and ASSEMBLER are being developed. Existing VIC and 40 column PET BASIC programs can be easily converted.

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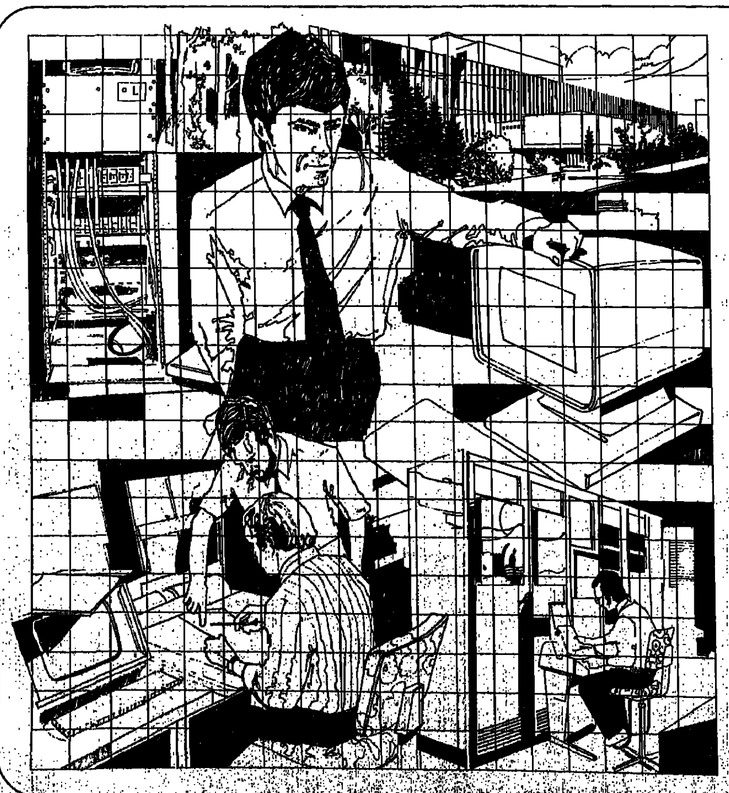

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Poole is attractively situated on the Dorset coast. Housing costs are reasonable and social, recreational and other amenities are excellent.

Make contact now

Telephone Glyn Griffiths (reversing charges) on Poole (0202) 675161 ext. 2028 on any weekday up to 8.30pm (until January 28th '83) or write with brief personal and career details to: Glyn Griffiths, Plessey Company Ltd, Sopers Lane, Poole, Dorset BH17 7ER.

PLESSEY

[illegible]

[illegible] WITH A HIGHLY

[illegible]

Our client, a leading multinational, has identified a requirement for a number of specialists to augment the expertise already available within their sophisticated technical environment. The successful candidates will be of a suitable calibre to aid the large Data Processing department in its aim to meet the challenges of a forward-thinking, dynamic and profitable organisation.

Currently, the Company's systems are operating on IBM mainframes and Honeywell Level 6/DPS-6 mini-computers in distributed mode. The departmental specialists will be instrumental in the integration of these, together with the development of IMS databases and the use of micro-computers as stand alone processors and terminals.

The systems are implemented and supported throughout Europe. There will be an opportunity for European travel.

Technical Specialist
circa £13,000

A technical specialist is required to provide technical support to 3 major Level 6/DPS-6 application systems and develop facilities and utilities to reduce system operational costs.

As the technical competence centre for Level 6/DPS-6 systems within the department, your responsibilities will include:– the development of facilities and utilities using high and low level language, fault diagnosis of complex problems incorporating hardware, software and telecommunications and the maintenance of operational status of all field systems in Europe.

The suitable applicant will have a minimum of 5 years in DP, 2 of which have been spent in a similar Level 6/DPS-6 specialist group. He/she will have in depth knowledge of TPS and GCOS (Mod 400), a working knowledge of screenwrite, COBOL 1 or assembler and good project control skills.

Database Administrator
circa £12,000

A Database Administrator is required to maintain the IMS environment for current systems and prepare for a new development phase.

Your responsibilities will include:– DB/DC design and development, database updates for new releases, maintaining current structures and applications, plus troubleshooting.

The suitable applicant will have a minimum of 2 years IMS DB/DC experience with a sound knowledge of MVS JCL and also previous experience in problem solving and debugging, gained within a technical environment.

Cobol IMS
Analyst/Programmer
circa £9-11,000

An experienced analyst/programmer is required to work within an IMS database project.

The successful candidate will have up to 5 years programming and analysis experience, principally using COBOL on the IBM 370 range with a knowledge of DL/1 and JCL plus some IMS experience. He/she will develop their IMS expertise both through project work and formal training, and will also be self-motivated and work with minimum supervision.

Our client is located west of London, well served by road and rail links from Central London and the Home Counties. They offer good working conditions and a full range of benefits including:– relocation assistance, family BUPA, subsidised restaurant, contributory pension.

For more information and an immediate interview, telephone **Nick Clements on 01-734 7394 or on 01-546 7813** in the evening or at weekends.

WARWICK WOODWARD

A SPAN GROUP COMPANY

43-44 GREAT WINDMILL STREET, LONDON W1V 7PA
TELEPHONE 01-734 7394 24 HOUR ANSWERPHONE

MANAGEMENT & EXECUTIVE SELECTION

telephone 01-637 9611

Bank on £19 to 26k—TAX FREE

We are a long-established bank in Kuwait that covers a wide range of services including lending, treasury, commercial/retail customer facilities and branch banking.

Existing and planning development projects result in the need for the following personnel:

METHODS AND PROCEDURES DEPARTMENT MANAGER £23 to £26K

To be responsible for the initial organisation of the M and P department and the training of selected staff, the initial function of the department will be the review and documentation of all bankwide procedures.

Requirements
- 2 years' experience in banking operations.
- 5 years experience in M and P including at least 2 years at management level.

FOR ALL THESE POSITIONS GOOD COMMUNICATION SKILLS ARE ESSENTIAL WITH PREFERENCE GIVEN TO ARABIC SPEAKERS.

Our current D.P. installation has:
- IBM 4331 + 4341 on order.
- IBM 3600 on-line teller terminal system in all branches.
- DOS/VSE
- CICS/VSE command level.
- ICCF.

E.D.P. PROJECT LEADER £21-£25K

Requirements
- Proven successful development – 7 years minimum.
- Team leadership skills.
- Banking experience.
- IBM 4300 on-line/database experience.

E.D.P. SYSTEMS ANALYST £19 TO £22K

Requirements
- Sound systems analysis experience – 5 years minimum.
- Programming background.
- Banking experience.
- IBM 4300 on-line/database experience.

Benefits include:
- Annual return flight for family.
- Free furnished family accommodation.
- Payment of local education fees.
- 40 days annual leave.

This outstanding opportunity demands highly motivated professional individuals capable of mixing with people of different nationalities and cultures.

Please call Karen Whelan immediately on 01-637 9611 as positions begin March 1983.

Suite 201/6 Albany House 324 Regent Street London W1R 5AA 01-637 9611

MANAGEMENT & EXECUTIVE SELECTION

DATA PROCESSING MANAGER

ENGINEERING ENVIRONMENT

Location: Camberley, Surrey **Excellent negotiable salary**

Our client is Cable Belt Ltd., a leading company in long-distance conveyor systems. They now wish to recruit a data processing manager to be responsible for the management and further development of their data processing capability. Our client uses primarily a VAX11/780 and a VAX11/750 at their Camberley headquarters. Computer hardware is currently being installed in Australia, South Africa and the USA, and the successful applicant will be responsible for co-ordinating systems implementation at these sites. Consequently there will be some international travel.

We are looking for someone who first and foremost is a good organiser of work and of people. The successful applicant will probably have a good engineering background and ideally will have worked for a period of time in a CAD/CAM environment. The successful candidate will be dealing with users at all levels and the ability to cope effectively with the pressures generated by this contact is very important.

The broader responsibilities of the data processing manager cover not only the selection and installation of all data processing hardware, but also the development of applications software to meet the growing needs of the business. If you are looking for a position which offers a significant challenge and will also provide considerable job satisfaction please send curriculum vitae to John Goldsmith.

JVG RECRUITMENT LTD

JVG Recruitment Ltd., Sentry House, Frimley Road, Camberley, Surrey.
Tel: Camberley (0276) 29213 (24-hour answering service). Telex: 858386.

A member of Search Partners International

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OPERATIONS IN THE HEALTH SERVICE!

The South West Thames Regional Health Authority requires additional personnel to be based at the Regional Computer Centre, Springfield Hospital, London SW17.

Computing within the centre is currently based on powerful ICL 2956 & 1904S hardware running under G3 which provides medical, financial and management information to the region. DEC-VAX hardware has recently been installed to provide online Patient Administration systems and direct data capture for current batch application.

A two-shift system is in operation and other benefits include modern offices, coffee lounge; and excellent recreational facilities both on site and nearby.

NETWORK CONTROLLER £8017-£11266

The Communications Section has a requirement for a Network Controller to assist with the maintenance and installation of a rapidly expanding network. The successful candidate will have a minimum of 12 months' relevant experience and be conversant with both equipment and conventions relating to a Communications Network environment.

This is initially a days only appointment but shift working may be required in the future.

SENIOR OPERATOR £7629-£9620*

This position will interest operators who have at least two years' George 3 experience and wish to develop their supervisory skills.

DATA CONTROL CLERK £6498-£7629*

Applications are invited from candidates who have a good understanding of Data control, preferably with a knowledge of George 3 JCL.

*Includes shift allowance.

For further details contact:
S.W.T.R.H.A.
Regional Computer Centre
Springfield Hospital
61 Glenburnie Road
Tooting SW17. Tel: 01-672 [illegible]

TEESSIDE POLYTECHNIC COMPUTER CENTRE

The Computer Centre provides a computing service for the teaching, research and administrative work of the Polytechnic. It is in the process of transferring this service on to three interconnected Prime 750 computers.

Applications are invited for a:

TEMPORARY PROGRAMMER ANALYST

To join the Information and User Support team providing user support including advice, writing technical documents, etc.

Grade, according to qualifications and experience will be on the AP3-AP5 scale. £5,973-£8,325 per annum.

Closing date for applications: 11 February 1983.

Application forms and further particulars from: The Personnel Section, Teesside Polytechnic, Borough Road, Middlesbrough, Cleveland TS1 3BA. Telephone: (0642) 218121, Ext. 4114. (2257)

BASIC+ ANALYST/PROGRAMMER

Circa £12K

If you are an experienced BASIC+ PROGRAMMER who has worked in a commercial environment on a DEC PDP/11 with the RSTS/E operating system then you could be the person for us.

We are a small department in a go-ahead company and we are looking for another team member to fill a newly-created post.

Benefits include free lunches and a free holiday in Greece each year.

INTERESTED? Phone John Powell, Data Processing Manager, on 01-874 7575.

EXCELLENT CONTRACTING OPPORTUNITIES

Our immediate domestic and international consulting needs are detailed below. If you are of a professional disposition, skilled and dedicated, and wish to join our growing permanent or contract staff, please contact us in respect of these and future opportunities.

INTERNATIONAL

COBOL, ICL 2900, VME/B	All levels	Kuwait
FOCUS, RAMIS or NOMAD	Analyst/Programmers	USA
PL/1, IMS/DB and IMS/DC	Consultant	Holland

UK

COBOL, IMS/DB and/or DC, ADF	Programmers, Programmer/Analysts, Team Leader	Home Counties; Worcestershire; Essex
COBOL, WANG	Programmers	London
IMS/DB	Database Administrator	Home Counties
COBOL, IDMS, ICL 2900	Programmer	Bucks
COBOL, ICL 2900, VME/B	Programmer	London
ADABAS, NATURAL	Programmer/Analyst	London
COBOL, HP3000, RAPID	Programmers	London; Norfolk; Aberdeen
RPG III, S/38, MAAPICS	Analyst/Programmer	London
COBOL, ICL 1900	Programmer	Essex
NOMAD, RAMIS, FOCUS, INQUIRE	Programmer/Analyst	Home Counties
COBOL, DOS	Programmer/Analyst	London
COBOL, DEC/VAX	Programmer	Essex
IBM 3890, ASSEMBLER	Programmer	Home Counties

For more information please contact:
Group Resources Division
TANGENT COMPUTER SERVICES LTD.
102/108 South Street
Romford
Essex RM1 1RX
Tel: Romford (0708) 750201
(24 hour answering service)

RPG II Management Opportunity

Nikon

W. London **to £12,000**

Nikon is one of the world's top manufacturers of cameras and photographic equipment.

Reporting to the Financial Controller, this is an opportunity for an experienced RPG II programmer to take full control of their System 34 installation, handling a wide range of commercial applications together with the development of new systems as the company continues to expand.

To succeed in this young, enthusiastic environment, you will need to be sociable, have an outgoing personality, be practical and self-sufficient.

The benefit package is excellent and in line with that expected from a company of this stature.

To apply please telephone or write quoting reference: 6559.

Lloyd Chapman Associates
123 New Bond Street, London W1Y 0HR 01-499 7761

SENIOR SYSTEMS PROGRAMMER MVS

IT'S NOT WHAT YOU KNOW

Experience is one thing. Using that experience to the best advantage in your career is quite another. That's why we at Air Products feel that this opportunity will particularly appeal to someone who already holds a demanding post but knows that he or she could achieve much more in the right environment.

The kind of person we're talking about has at least 5 years' IBM systems programming with a strong background in ACF/VTAM & NCP. Mature, professional, capable of handling responsibility... does that sound like you?

IT'S WHAT YOU DON'T KNOW

We're a major, profitable engineering concern intending, as part of a continuing investment in data processing, to introduce an advanced international network for a wide range of applications.

The first real challenge for you will be to supervise the upgrading from MVS SP.1.1 to 1.3 – systems generation, program product installation and maintenance to give us a base to implement our planned extension of our existing network. The proposed network will utilise MSNF for time-sharing and NJE to mini's. Heading up a small team, you'll also be expected to deputise for the Technical Support Manager in his absence.

The hardware consists of a 16 meg IBM 3033 mainframe with distributed processing on Hewlett Packards and word processing on Wang/VS. The software includes TSO, ACF/VTAM and NCP, ACF2, CICS. Database applications exist using IDMS. Voice, data and text technologies will soon be introduced to provide a corporate office information system.

The salary and benefits offered reflect the seniority of this appointment, while a pleasant "out of town" location means no more commuting.

Don't you think you should know more? Then contact: Lorraine Jones on Walton-on-Thames 49478 who will put you in touch with the Manager.
Air Products Limited,
Hersham Place, Molesey Road, Walton-on-Thames, Surrey.

Air Products

(2213)

Computer Professionals

4, Kendrick Mews, London SW7 3HQ Tel: 584 8790

Analysts/Senior Analysts

Herts £10,000-£14,000+

A well-established U.K. organisation, recognised as market leaders in their field, wish to recruit ambitious and innovative people to work in their technically demanding computer environment.

Candidates must have specific systems analysis experience including significant involvement in the development of at least one major commercial or financial application. Personal qualities will include enthusiasm, initiative and the ability to deal with users and their problems.

This is an excellent opportunity to join an interesting and exciting company who are constantly developing and expanding their business into new areas of activity and we are therefore able to offer a wide scope of opportunities for people wishing to develop their careers. Ref: 2001/A

Programmers

North London £10,000-£12,000+

Our client is concerned with the provision of sophisticated on-line transaction processing systems to banking/financial organisations.

A major programme of new applications development, based on large ICL 2900 processors, has created vacancies for keen and enthusiastic programmers with sound ICL COBOL experience, preferably gained in an on-line environment.

An attractive salary is offered together with a range of generous benefits which include profit-sharing, non-contributory pension, free life assurance, subsidised staff restaurant and house purchase assistance. Ref: 2001/B

HP Opportunities

London/Bucks £7,750-£9,000 + Car

The U.K. computer services centre of a multi-national software group is seeking additional programmers to strengthen project teams involved in the development and support of sophisticated commercial and financial systems.

Experience must consist of at least 12 months' programming in an HP 3000 COBOL installation. Client contact is an integral part of the work and the successful applicants will have initiative together with the personality and confidence to represent the company in a professional and business-like manner.

Excellent career prospects are complemented by an outstanding benefits package including relocation. Ref: 2001/C

(2234)

For further information, write to Computer Professionals quoting the advertisement reference no; alternatively phone Isobel Bruce or David Futcher on 01-584 8790.

CP Computer Professionals looks after the professionals.

Recruitment Consultants Licence No. SE 0788

Allied-Lyons PLC, the largest food and drink Company in Europe, has vacancies in its Group Telecommunications Services Department based in Burton-on-Trent.

Networks Design Engineer (Data)

The successful applicant will be required to assist in planning, developing and implementing voice and data communications networks for the Allied-Lyons Group of Companies. This will involve critically examining existing network facilities and making recommendations to provide more cost effective and efficient communication systems.

Experience of modern network switching methods and techniques is essential together with seven to ten years' experience in data network design and office communication systems.

The job entails travel in the U.K. and a Company car will be provided.

Telecoms Consultant

The Telecoms Consultant will join a small team responsible for providing a specialist service covering all aspects of telecommunications (e.g. voice, text, facsimile, data etc.) throughout the Group. The job holder will be required to recommend and implement accepted proposals designed to improve the efficiency and cost effectiveness of the communication system.

A number of years' practical telecommunications experience in a large commercial organisation is essential.

Applicants for both positions should be educated to HND/Degree level in a technical/engineering subject. Attractive starting salaries will be offered together with the normal range of benefits associated with a large Company. Assistance with relocation expenses will be available where appropriate.

Applicants, male or female, should write or telephone for an application form to:— Mrs C. M. Lane, Personnel Officer (Central Staff), Allied Breweries Limited, 107 Station Street, Burton-on-Trent, DE14 1BZ. Telephone No. Burton-on-Trent 45320 Ext. 2309.

ALLIED LYONS

(2249)

PROGRAMMERS

c £10,000 p.a.

Data Laboratories Ltd, part of the Bell and Howell Group, has vacancies for Computer Science or Electrical Engineering graduates with two years' programming experience to work on microprocessor controlled instruments and Video displays. Experience of PL/M 86 or 8086 Assembler Language an advantage.

Write enclosing c.v. to:

The Chief Engineer
Data Laboratories Ltd, 28 Wates Way
Mitcham, Surrey

(2172)

Lothian Regional Council

STEVENSON COLLEGE OF FURTHER EDUCATION

LECTURER B in COMPUTER STUDIES

Salary on Scale: £7314-£9818

required in the Department of Computing and Micro technology to teach a range of courses in computer application, operations, programming awareness.

Applicants should have relevant practical experience and possess a degree or other relevant qualifications.

Application forms and further particulars from:

The Principal
Stevenson College of Further Education
Bankhead Avenue, Edinburgh EH11 4DE

MARRIED STATUS – SAUDI to £25K

During the next three months we will be able to offer married or single status contracts to experienced PL/I PROGRAMMERS and SYSTEMS PROGRAMMERS, pref. graduates (or equiv. qualification). Min. 3 years exp. on IBM equipment. £20,000-£25,000 tax-free according to status.

Ring JEFF MINARDS, M.D. of

CBS APPOINTMENTS

For up-to-date details
Bournemouth (0202) 292155 (office or home 0202-884891)

(2192)

BOX NUMBERS

Box number replies should be addressed to:

Box Number ....

c/o Computer Weekly
Quadrant House
The Quadrant
Sutton, Surrey SM2 5AS

CAMBRIDGE CITY COUNCIL

Systems Analyst

Salary up to £10,071 (SO1/2)

Applications are invited from suitably experienced persons for this new post in the City Treasurer's Department. The successful candidate will be involved initially in the development of new financial systems based on GL Plus for which training will be available.

The Council has recently installed an ICL ME29 which will shortly be enhanced to cope with increasing demands by user departments for on-line information developments. This post offers career development in an attractive environment, Cambridge being the regional centre and an international tourist attraction. A contribution towards relocation expenses and the provision of temporary housing accommodation is available in appropriate cases.

Application forms, returnable by 28th January, 1983 are available from City Treasurer, The Guildhall, Cambridge, CB2 3QJ. (Tel. No. 0223 358977 Extn. 301).

The Council is an equal opportunity employer.

(2230)

University of the Witwatersrand, Johannesburg

COMPUTER SCIENCE SENIOR LECTURER

Applications are invited from suitably qualified persons, regardless of sex, race, color or national origin for appointment to the above post, in the Department of Computer Science.

Candidates from all areas of computer science will be considered; however, computer networks, operating systems, architecture, and software engineering are of special interest to the Department.

The Department teaches courses in Computer Science at both undergraduate and postgraduate level. Research in several areas of Computer Science is actively pursued. Strong links with the Department of Electrical Engineering and the Division of Business Information Systems exist.

The salary will be within the range R19 557-R24 045 per annum. The initial salary and level of appointment will be determined according to the qualifications and experience of the successful candidate. Under certain circumstances a salary subvention may also be payable. Benefits include favourable leave conditions, an annual bonus, pension and medical aid schemes and housing subsidy (if eligible). (£1 = R1.73 approx).

The successful overseas applicant may be offered a three year contract, if preferred. The University will pay the return airfare of these applicants.

Interested persons should obtain the information sheet relating to this post from the Secretary of the South African Universities Office, Chichester House, 278 High Holborn, London WC1V 7HE, England, or from the Registrar (Planning and Staffing), 1 Jan Smuts Avenue, Johannesburg 2001, South Africa, with whom applications should be lodged by 22 March 1983.

Programmers

British Nuclear Fuels Limited is a world leader in the provision of nuclear fuel services. The Company's computer resource has recently been re-organised to provide each of its sites with selected hardware and software to meet their specific technological and administrative needs.

We are currently developing systems to run on a range of hardware which includes PRIME, ICL 2904, ICL 2982. These computers are located at our four sites and at our Head Office in Risley, Cheshire. We are developing financial, commercial and personnel systems using on-line database techniques, COBOL and FORTRAN.

To aid our development we need to recruit male or female computer professionals as Commercial Programmers. Applicants should have a minimum of 2/3 years DP experience in COBOL. Knowledge of on-line techniques and database would be advantageous.

Salary within the range £6260-£7265, in addition to which there is a market rate allowance of up to £1500 a year, a Company productivity bonus scheme and flexible working hours.

These posts are based at our Risley, Cheshire, Headquarters.

To apply, please write or telephone for an application form, quoting reference 0479 to Mr. M. Cross, Staff Office, A121, British Nuclear Fuels Limited, FREEPOST, Risley, Warrington, Cheshire WA3 1BR. Telephone: Warrington (0925) 35953 Ext. 2435P.

BNFL

(2218)

LECTURER/CONSULTANT

c £9,000 + car

Protocol Operations Ltd, a leading training and education company in the UK, has a need for people aged 28 to 35 to join its lecturer/consultant team, providing a high standard of service to data processing throughout the UK, Europe, Middle East and Australia.

Experience is required of having proven knowledge in computer operations, especially in the area of IBM DOS/VSE, POWER/VSE, VM, CICS, VSAM and Teleprocessing.

If you believe you have the required background for this position, and possess a high level of self motivation and the ability to work without direct supervision send your complete cv, in confidence

to: Phil Cartmell,
Protocol Operations,
Protocol House,
26/28 Southampton St,
Reading,
Berks. RG1 2QL

2227

protocol

Practical Computing

We currently require a bright enthusiastic

SALES EXECUTIVE

to join one of Britain's leading Personal Computer publications.

You will be selling a complete advertising package to our advertisers and their agents, including stand space at our very successful COMPUTER FAIR exhibitions.

Experience of both direct and telephone selling, preferably within publishing, would be a distinct advantage.

Knowledge of personal computers although desirable is not essential.

Salary range £6,300-£6,900, company car provided.

Applications with CV should be addressed to Ian Carter, Advertisement Manager, Practical Computing, Room L310, Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS.

These positions are open to both men and women

IPC BUSINESS PRESS

Comms. S/W Design

Herts. to £12,000

Develop your career and your existing communications software skills by joining a company already firmly established in this high growth sector of the computer industry. We are seeking software people with experience in developing 3270 compatible systems and as much experience as possible in X.25 and L.A.N. products. Experience in 'C' or PASCAL using M6800 and/or TI9900 would be useful.

Technical Authors

Wilts./Herts. £9-11K

Candidates will need to have a minimum of two years experience writing manuals in a computing environment. They must be capable of designing and developing documentation sets for newly developed hardware and software. The job will involve working closely with programmers and engineers to prepare manuals for technical and non-technical users. Degree preferred. Reloc. possible.

Micro Development

Cambs. £8-£10K

An important and growing application area for micro based systems is in portable data capture devices. Our client is building a team of development staff who are working on new products in this area. If you have a minimum of two years experience programming micros, or minis using an assembler and a high level language please apply.

Software Support

W. M'sex. £12-14K + car

Take this opportunity to join one of the most successful computer companies of our time. You will need several years technical software experience to include: real time, data communications and/or database systems. Analysts with banking or financial systems experience would also be of interest. You cannot fail to be impressed by this client. Higher salary but no car for City office location.

Satellite Telecomms.

Beds. £8-11K

The growing sector of computer communications is being further extended by the advances in satellite communications systems. Our client is a major force in this newly expanding area of technology. We would be interested in meeting software and hardware designers to participate in major development projects for worldwide systems. Degree and minimum 2 years micro or mini systems experience.

Real Time Software

Hants. £10-15K

Major new projects involving the application of powerful super-minis are being undertaken by our client. Their continuing success is due to excellence in project development techniques and control. A range of work is available to stretch your capabilities. DEC and Tandem experience would be particularly useful. Candidates must be prepared to spend time on client sites.

DEC Comms. Software

Surrey £9-12.5K

A successful City firm is expanding a small development team working with DEC, VAX and PDP equipment. Candidates with software experience gained with VMS, RSX11, UNIX or similar using Assembler and/or Fortran are required. Areas of interest are message switch, data comms., telex, X.25 etc. The company is moving to Woking in February 1983.

Digital Designer

S. M'sex £8-11K +

If you would be excited by the challenge of working for a small but highly successful design company, this is your chance. Candidates must be capable of Assembler level programming when required. However, the main requirement is for a Digital/Micro designer. You will be impressed by the company's record and will need to be of above average ability.

Project Manager

Berks. to £16,000

This is an exceptional opportunity for a bright, technical software person to enhance their career. Our client, a successful engineering/manufacturing company is developing applications on their HP3000. Candidates must have a background in systems software, or real time applications gained in a mini computer environment. HP3000 not essential. Preferred age early 30s. Excellent co. benefits including reloc. assistance.

Programmer Analyst

City £8.5-11K

An expanding, mini computer based, business systems development group is seeking an additional programmer/analyst to join their team. Candidates must be degree level and have experience in commercial applications development. Knowledge of Wang/COBOL and/or DEC/DIBOL is required. This is a prestigious international company offering excellent career development prospects and attractive company benefits.

Programmers/ Engineers

Wilts./London to £12K

A major company in the development, manufacture and marketing of micro based distributed office systems is seeking to expand current development teams. Experience of PL/M-86, or 'C' useful. Vacancies exist for team leaders as well as implementors. Projects cover W.P., comms., L.A.N. This is an exciting and attractive sector of an expanding market. Reloc. assistance possible.

Programmers Minis/Micros

Berks. £7-12K

A successful company with a product having a special place in the communications and travel industry, requires several programmers at different levels to join existing development teams. Areas of expertise relevant include Z80 Assembler, PDP11 systems, UNIX and 'C', PLZ, Viewdata, CP/M, comms and travel agency applications. Excellent benefits include special holiday discounts.

Consultant Tech. Author

N. H. Counties £Neg.

A large publications department of a very successful computer company is seeking an experienced technical author who will provide advice and assistance across a range of internal and external project teams. He/She will be capable of analysing and specifying documentation needs and styles for a wide range of purposes. Tact and self confidence essential.

IBM Series 1 Programmer

S.E. London £9-11K+

The communications centre of an International Bank requires an additional programmer for the enhancement and support of the IBM Series 1 component of their multiple computer message switch system. Assembler level programming experience is essential. There will be the opportunity to gain experience on DEC PDP minis. Attractive bank benefits: low interest mortgage, free pension, free restaurant.

X.25 Development

Herts. £8-15K

Our client is engaged in the design and development of a very large packet switched network. The completed system will involve the installation of hundreds of computer nodes throughout the U.K. If you have from two to ten years experience in systems software or real time applications please apply. Comms. is desirable but not essential. Reloc. assistance.

Senior Prog./Analyst

Berks. £9-13K

It is an essential requirement for this position that candidates have up-to-date experience with a range of financial systems. You will be expected to work closely with the financial dept. of a successful engineering/manufacturing company in development of HP3000 based applications. COBOL is essential, BASIC would be useful. Reloc. assistance, non-contrib. pension.

Analyst Programmer

Herts. to £10,000

A very successful computer manufacturer has vacancies in their internal D.P. department for experienced programmers to work on a variety of applications – commercial, financial, manufacturing systems. Preference will be given to degree level candidates with previous Basic experience. A positive, analytical manner is required for working with several user departments. A clean driving licence is essential.

Sen. Design Engineer

Herts. to £13,000

The successful candidate will be expected to play a major role in the development of advanced digital data communications products. He/She will interface with marketing and be sufficiently experienced to negotiate cost effective and timely solutions to their needs. Strong leadership qualities an advantage. An electronics degree and previous design of micro-board real time systems essential.

Tandem Comms.

N. M'sex. £9-13K

This expanding, turnkey vendor of Tandem computer systems is seeking highly motivated software people to work on advanced applications using Tandem equipment. Experience in communications and screen based applications using COBOL is required. The company has its own in-house Tandem system providing training on this very popular equipment. Candidates must be presentable.

Have you considered Recruitment Consultancy?

Amersham Based £Neg. package

If you are attracted to a position where earnings are related to effort, then this could be a good choice for you. Recruitment Consultancy is challenging and demanding but rewards are high for those who are successful.

At H.R. Associates we believe in offering our clients and our applicants the best service possible. People appreciate a good service and we enjoy giving it. If you are 25/35, bright, articulate, gregarious and have a sound background in computing, we would be pleased to review prospects with you.

Previous recruitment experience is not essential. However, you should be able to relate to a wide range of people, be at ease in any company, be able to assess people quickly and accurately, have no hesitation using the telephone and be prepared for long hours. You will need to be literate, to plan your work and be resourceful. You will be: assisted with client introductions, backed by an advertising budget and supported in your start up months until you are fully trained.

We are a small, successful and independent company. Our offices are light, modern and comfortable. We have the facilities for you to build a very rewarding future. Act now and plan for a new career in 1983.

Write or telephone (02403) 28383 during office hours –
we are always ready to discuss these and many other interesting positions.
Evenings and weekends only. Terry Harvey – Great Missenden (02406) 4705

(2197)

HR **H. R. Associates Limited** HR

57a Hill Avenue, Amersham, Bucks. HP6 5BX Tel: 02403 28383

PROGRAMMER/ ANALYST

to manage small Data Processing Department

Location: Near London Heathrow

Salary: Negotiable between £10,000 and £11,000

RPG 2 and MAAPICS background required

Our client is Kaynar UK, based near London Heathrow. They currently operate an IBM System 34 and now wish to recruit a programmer/analyst with a good RPG2 and a MAAPICS background to be responsible for implementing MAAPICS and also developing other systems as they may be required. The Data Processing Group is a small one and the successful candidate will play a valuable part in the development of the department. He/she will be expected to meet people at all levels within the organisation, to help educate users and to clearly understand their requirements. The position reports directly to the Financial Controller, and is one of considerable responsibility. Kaynar UK are part of a very large American group supplying parts to the aircraft and aerospace industries. The position offers a career opportunity to someone who is either working in a large data processing department at the moment or in a senior position in a small one to manage a group that is very important in the future development of the company. The successful applicant will be given every support to enable the appointment to be successful, and will enjoy working within a friendly and well-balanced atmosphere.

JVG RECRUITMENT LTD

JVG Recruitment Ltd., Sentry House, Frimley Road, Camberley, Surrey.
Tel: Camberley (0276) 29213 (24-hour answering service). Telex: 858386.
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(2247)

PROGRAMMERS & ANALYST/PROGRAMMERS COBOL/BASIC £8,000-£11,000

Several outstanding opportunities exist within this rapidly expanding LONDON-based international organisation with a £ multimillion turnover.

The data processing department houses up-to-the-minute IBM technology with a wide variety of modern periphery equipment. In order to meet growing demands our client is seeking to recruit both Programmers and Analyst/Programmers keen to progress their career in a fast moving, real-time environment.

If you can offer at least 18 months' COBOL or BASIC expertise and want to find out more about these exciting positions contact DP Selection Services quoting Ref W1201.

COMMERCIAL ANALYSTS — LONDON to £13,000

A large UK company based in London currently requires experienced Systems Analysts to work on their IBM mainframe.

The successful applicants will be able to demonstrate experience of systems analysis from feasibility through to implementation in a commercial environment. A programming background together with sound IBM and TP knowledge would also be advantageous though not essential.

The opportunity to work on new development projects in a friendly but professional and hardworking atmosphere is combined with an excellent salary package and benefits.

Preliminary interviews will be conducted at DP Selection Services offices in W1.

Ref W1203

TWO DEVELOPMENT TEAMS WANTED £neg

The exciting news is that the New Year heralds the beginning of two major development projects at our client's IBM 4331 DOS/VSE site creating opportunities for DP personnel at all levels.

Obviously CICS/DL1 COBOL Programmers and Analysts are premium candidates but applicants offering at least two-three years' experience in other environments will also be appointed. Good commercial applications knowledge in either financial and/or inventory reporting together with experience of DBMS or TP utilities will support your application. Based in London, a full range of company benefits are included with this golden opportunity to establish your career in 1983.

Ref W1202

PL/1 DEVELOPMENTS ANALYST/PROGRAMMERS & PROGRAMMERS CENTRAL & WEST LONDON £9-£13,000

New PL/1 based projects are in the early stages of development at our client's sites in Central and West London. These projects include the use of CICs and DATABASE software and education and training will be provided on these techniques where necessary.

PROGRAMMERS will be able to offer around two years' experience and will be keen to progress towards analysis. ANALYST/PROGRAMMERS will have had some exposure to design and specification work and will enjoy working closely with Users.

To learn more about these developments telephone or write now quoting Ref W1204.

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dp SELECTION SERVICES
A member of the DP Support Services Group

7 Swallow Street, London W1R 7HD
"We look forward to hearing from you."

01-434 2042
(24 hour Ansaphone)

(2216)

ANALYST/PROGRAMMER HP 3000 to £13,000

C. London based company seek an experienced Analyst/Programmer to enhance their existing team. Applicants should have a solid D.P. background which must include two years + COBOL, knowledge of HP 3000, particularly IMAGE database and sound systems and database design experience. In return the company offers a wide range of benefits and is committed to full training of employees where necessary.

PROGS & ANALYST/PROGS HP 3000 to £13,000

Rapidly expanding company based in the Northern Home Counties requires experienced computer personnel at a variety of levels. Programmers are required and should have around two years' COBOL experience preferably on HP equipment although other similar size machines may be considered. Analyst/Programmers should have three years' experience which must include some HP 3000 exposure. This is an excellent career opportunity to join a fast growing company and work on a variety of applications.

ANALYST/PROGRAMMER BURROUGHS c £10,000

Software house based West of London seeks an Analyst/Programmer with two years' + BURROUGHS COBOL experience. A considerable amount of work is done on client sites and applicants must therefore be presentable in both appearance and attitude. Excellent working conditions with the prospect of a company car in the future are offered to the successful candidate.

PROGRAMMERS HP 3000 c £8,500

Programmers with around 18 months' HP 3000 experience, using any language, are required by C. London installation. A strong emphasis is placed on training and successful appplicants will be sent on the latest courses where necessary. The company also offers exposure to systems and movement to Analyst/Programmer role fairly quickly, making this an excellent career opportunity.

SENIOR PROGRAMMER HONEYWELL L66 £10,000

Major manufacturing concern is currently seeking to recruit a Senior Programmer to lead this successful company's D.P. programming team. A minimum of four years' HONEYWELL programming experience is required together with sound knowledge of IDS database systems. Perks include S/T loan, company discount on products and relocation expenses where necessary.

PROGRAMMER ICL COBOL £9,000

Small successful software house based in Middlesex requires Programmers with around three years' ICL COBOL experience. Knowledge of on-line systems is useful however not essential. Perks are varied and include five weeks' holiday, profit sharing scheme and subsidised world-wide travel.

ANALYST/PROGRAMMER ICL VME/B £9,000

Based in North Surrey this financial concern requires an Analyst/Programmer with a minimum of three years' experience. Applicants should be familiar with either DME/G2 or VME COBOL programming techniques together with a sound aptitude for systems. Perks include a preferential mortgage and subsidised restaurant.

PROGRAMMER BASIC + RSTSE c £8,000

A software house specialising in DEC systems has a requirement for a BASIC + Programmer. Applicants should have 18 months' BASIC gained in any commercial environment. This is an ideal opportunity for programmers to move on to VAX equipment since the Client is installing several VAX machines.

PROGRAMMER/ANALYSTS RPG/GSD £10,000

Two medium-sized Software Houses have identified several requirements that have arisen due to recently won orders. Applicants should come from solid GSD backgrounds with a minimum of nine months' programming. The attraction with these posts is the diversity of the work; current projects range from manufacturing through to banking. Applicants will also become involved with the users and should therefore be good communicators and presentable. Both clients have in-house SYS 34s and 38s.

(2217)

Apex 404 4821

Apex Computer Recruitment Ltd.
London Office: 59 Grays Inn Road, London WC1X 8TL. Tel: 01-404 4821.
Brussels Office: Rue Gabi de Gamond, 24, Ucele 1180 Brussels. Tel: 010 322 377 4193.

Senior Assistant Data Processing Manager

Hong Kong £25,620p.a. +25% gratuity

- Low tax area — maximum 15%
- Medical and dental benefits
- Free passages & holiday visits for children
- Generous annual leave
- Subsidised accommodation
- Children's education allowance

Applications are invited for the above post in the Government Data Processing Agency in Hong Kong.

Applicants must have a degree from a Hong Kong or British university, or equivalent; and 15 years' post-qualification experience in the computer field, 8 years of which should be at senior management level

The successful candidate will be responsible for the management of the section which provides administrative support services, operational and technical support services, planning and quality assurance services and departmental services; training and career development of staff in the data processing field; ensuring that departmental computerisation programs are det up and pursued in accordance with policy; overseeing the development and implementation of computer applications, the installation and operation of departmental computer centre and dedicated computer equipment.

The appointment is for an initial period of 3 years with annual leave. Salary is HK$22,200 per month (approx £25,620 p.a.*)

For further details and application form, write to the Hong Kong Government Office, 6 Grafton Street, London W1X 3LB, quoting ref: APPT/DPA 1/82. Closing date for return of application form: 10 February 1983.

*Based on exchange rate HK$10·40=£1·00 (Subject to fluctuation)

(2228)

Hong Kong Government

VME/B TECHNICAL SUPPORT

c.£10,000 Stevenage, Herts.

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We are now looking for a

SYSTEM PROGRAMMER with at least two years experience programming under VME/B, to join the Technical Support Team. You will be maintaining and enhancing the systems software and be involved in the further development of our TP services and the enlargement of the communications network.

Good communication skills are particularly important as you will be advising and supporting the Operations and Programming Sections. You must, therefore, be able to assess technical problems easily and resolve them rapidly. Your sound technical knowledge will also enable you to produce and document any required software tools and utilities.

The competitive salary offered will be supported by substantial company benefits.

Please telephone or write with full career details to Richard Corney, Technical Services Manager, Dixons Limited, Dixon House, 18-24 High Street, Edgware, Middlesex HA8 7EG. Telephone 01-952 2345 extension 3369.

Dixons

(2246)

SOFTWARE PROFESSIONALS

LONDON £11,500-£15,000
including MORTGAGE SUBSIDY

SET UP IN THE EARLY SEVENTIES with a sophisticated computer system using a powerful mainframe and mini-computers and having reaped the benefits of substantial home-grown Real-time and Database Software, our Client is . .

PLANNING FOR THE MID-EIGHTIES when the options seem numerous and exciting. With multi-processor Mainframes and a large Micro based terminal network they are evolving a strategy which will allow reliable and economic exploitation of present and future technology.

IS YOUR CAREER IN SOFTWARE? Are you a Graduate with a minimum of three years' experience in the Systems Software area and grounded firmly in the realities of a business environment? Come and join this small team of dedicated computer software professionals who are engaged in a wide variety of work ranging from Software Design and Hardware Evaluation to Systems Efficiency.

As a member of a major Financial Group, our Client provides extremely generous fringe benefits including Subsidised Mortgage after one year, Non-Contributory Pension Scheme, free Life Assurance, free BUPA, Interest Free Season Ticket Loans and Equity Participation through Share Allocation.

Why not ring PETER BARSON on 01-839 6087 for further details.

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107 Jermyn Street, London SW1Y 6EE

BARSON & TAYLOR

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Senior Assistant Data Processing Manager

Hong Kong £25,620p.a.* +25% gratuity

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Dixons

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(2248)

SOFTWARE PROFESSIONALS

LONDON **£11,500-£15,000 including MORTGAGE SUBSIDY**

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BARSON & TAYLOR LTD
107 Jermyn Street, London SW1Y 6EE

BARSON & TAYLOR

(2233)

Systems & Programming Opportunities

IBM 4331 DOS/VSE

Salary range US$20-35,000+benefits

Systems Analysts, Analyst Programmers and Programmers are required for a successful American organisation in the services industry, with its headquarters in Virginia.

The Company uses a wide range of computer hardware for various applications although the current requirements are related to the IBM 4331 based systems. A minimum of three years' DP experience is essential and a COBOL programming background is required for all positions. The main requirement is for Analyst/Programmers although opportunities also exist for Analysts and Programmers. RPG and accounting systems experience would be useful but is not essential.

These are permanent positions although contract appointments will also be considered. Realistic U.S. salaries will be in the $20-35,000 range plus fringe benefits including medical, travel, life assurance, etc.

Please contact Ian Murray West

WEST GERMANY

Systems Programmers c£700 p.w.

IBM 3033 MVS/IMS

Five Systems Programmers are required ideally on a contract basis for a major project in Central Germany to cover tuning, systems generation, enhancement, etc. Knowledge of PL1 or COBOL is also preferable.

Although some German ability would be useful this is not essential. Six-month contracts with extension options.

Please contact Roger Allington

SAUDI ARABIA

Sales

Basic c£18,000 tax free, on quota earnings, c£30,000 plus married accommodation, car allowance, home flights and medical cover

Our client, the exclusive Saudi Arabia representative for Data General, Tektronix, Calcomp and Printronix require two further salesmen to promote in particular the DG range of hardware and associate software.

Candidates must have a proven sales track record.

Please contact Jenny Dalrymple-Hay or Ian Murray West

LONDON/HERTS BORDER

Systems Designers to £12,500 + Benefits
Senior Programmers to £11,500 + Benefits

Our client, a major financial institution, has a requirement for several experienced DP personnel for new development projects. The installation is IBM 4341 under OS and with a further IBM 4341 planned during 1983.

Systems Designers must have over three years' experience in analysis and design in an IBM commercial environment.

Senior Programmers must have over three years' OS/PL1, ideally using CICS and/or Assembler.

An above average employment package, including immediate mortgage subsidy, free pension and life assurance as well as other attractive benefits will be offered.

Please contact Colin Maslen

LONDON AREA

Sales/Support Manager

Salary £10-£12,000 basic + Car & Commission

Set-up situation. Successful small company requires an enthusiastic self-starter to set-up their LONDON operation.

The Company market is fully integrated hardware/software system for the Electrical Engineering Industry; it is based on DEC 11/23 with graphics digitizers and a full range of applications software.

The successful applicant must have commercial experience, ideally handling financial applications such as nominal ledger, etc., be capable of handling client negotiations, assisting and training first-time users and sorting out basic DP implementation problems. Ideal would be some experience of DEC hardware and DIBOL. An academic or professional qualification would be advantageous.

Please contact Jenny Dalrymple-Hay

Please telephone 01-493 2947 (Mon.-Fri.) or at weekends Roger Allington on Little Gaddesden (044284) 3536 quoting ref. 3949

DALROTH & PARTNERS LTD., 4 HALF MOON STREET, LONDON W1 (2232)

Duncan Bransom Ltd. will be continuing their expansion throughout 1983 and are now looking for

2 Systems Analysts c.£15,000
2 Analyst Programmers c.£12,000

The company, formed in 1974, has dedicated itself to the production of applications software of the highest quality, mainly for IBM mainframes. To cope with the steady demand for its services and the growth planned for 1983 there are now vacancies for two systems analysts and two analyst programmers.

Successful applicants will have had two or three years working in one or other of these capacities. Experience on IBM machines using CICS, DL1, COPICS or ADABAS would be an advantage but this is not essential.

If you are looking to join a small dynamic organisation where, through your ability and hard work, you seek to progress to the top, this could be the opportunity for you.

A pleasant stable working environment is maintained where people can develop their professional skills whilst earning good money. Staff turnover is low – the company has only lost four people in nine years.

You should be prepared to work either in our offices in Potters Bar or on the premises of our clients, most of whom are located in the London area.

There are the usual fringe benefits including a profit sharing scheme. Please contact **Roger Griffiths on 01-502 0325 or Martin Hole on 0707 44681** to discuss a possible appointment, or write sending brief details of your career to date. Under no circumstances will your present employer be approached without first obtaining your permission in writing.

Duncan Bransom Limited

A company you can grow with

Head Office
37 Hillcrest Road,
Loughton, Essex.
Tel. 01-502 0325.

Potters Bar Office
Hoval House, Mutton Lane,
Potters Bar, Hertfordshire,
EN6 2BR.
Tel. 0707 44681.

London Office
102 Newgate Street,
London, EC1A 7AP.
Tel. 01-440 9500.

(2114)

ICL Analysts Programmers & Team Leaders required for over 50 projects commencing now until April

Do you have experience of any of the following?

IDMS TP CODASYL VME/B
TPMS G3 IDMSX G2+.

If so ring Caroline

IBM PL/1 IMS DB/DC (PROG)	MAR. S. LON 205
IBM COBOL (PROGS)	MAR/APRIL LON 204
VAX COBOL (PROGS)	ASAP ABERDEEN 203
VAX COBOL (DATATRIEVE IS POSS — SEN PROG)	ASAP E. LON 202
ICL 1900 COBOL G3 (SEN PROG)	ASAP E. LON 201
IBM PL/1 IMS DB (ANALYSTS)	ASAP OXFORD 151
IBM PL/1 IMS DB (PROGS)	FEB OXFORD 151
CORAL or ALGOL or PASCAL (ALL ROUNDERS)	JAN to FEB
	E. LON/ESSEX 200
"C" Experience for R/T COMMS PROJECT	ASAP W. LON/HERTS 198
PDP 11 + NATURAL AND/OR ADABAS	ASAP HOLLAND 195
IBM COBOL IMS DB/DC (DATA DICTIONARY CONSULTANT)	ASAP BEDS 194
IBM COBOL IMS DB/DC (PROGS)	ASAP BEDS 194
IBM COBOL IMS DB(DC (ANALYSTS)	ASAP BEDS 194
IBM SYS 38 RPG 111 (A/PROGS)	SOON LON & CITY

H. Programming & Systems Ltd.
Plymouth House, 7 London Road, Amersham, Bucks HP7 OHE
Tel: Amersham (02403) 22201

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THE MICRO SYSTEM CENTRE LTD.
Enterprise House
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Box Number ....

c/o Computer Weekly
Quadrant House
The Quadrant
Sutton, Surrey SM2 5AS

PSION
MICROCOMPUTER PROGRAMMERS & ANALYSTS

Psion is a substantial and rapidly growing microcomputer applications and software house.

We require creative, skilled and able programmers and analysts. Applicants should have experience of assembly language and machine-code on one or more microprocessors. This is an exciting opportunity to work with a dedicated team in Central London in the fastest-growing area of computers.

Salary range £8,000 to £15,000 per annum, depending on skill, experience and creative potential.

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Gloucester Place, London NW1
Telephone: 01-723 6619 or 01-723 9408
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Contractors

How does six months hard labour twice a year grab you?

Span is a specialist contract agency with a reputation for finding contractors good solid 6 months contracts. We expect our contractors to work hard and consequently to be well rewarded for their endeavours. We have built up an excellent file of professional programmers and analysts, but we always need more, so thumb through the requirements and give us a call or complete the coupon as soon as possible and send it to us so we may act on your behalf.

IBM CONTRACTS

★ System 34 and 38 RPG people with Banking or commercial experience for a number of assignments in London and the Home Counties are required immediately.

★ 4300 experienced people are required with a variety of software expertise from DL/1 to IMS to ICCF. We need application programmers and technical support staff. All areas.

★ 3033 MVS PL/1 and COBOL people are continually required. The individual software requirements range from IMS to TOTAL, ADF to CICS. London, Midlands and the South.

★ 8100 programmers with DPPX and DPCX COBOL are required for assignments on the South Coast.

★ General IBM Database people are required with IMS, ADABAS and/or TOTAL as consultants or at programming levels all over London and the South.

★ Systems Programmers with MVS and IMS experience are urgently required for very long term assignments in Central London, ring Alastair McIntosh for an immediate interview.

★ American opportunities also exist for CICS COBOL or PL/1 people in permanent or contract positions, ring Janet Chilvers for more information.

FIRST-TIME CONTRACTORS

Anyone interested in becoming a contractor should ring Phil Hart for more information.

ICL CONTRACTS

London assignments for ICL 2900 VME people include IDMS and TPMS specialists in addition to straightforward COBOL applications people. Also looking for Project Managers and Senior Analysts.

2904 and ME29 Programmers are required for London and Surrey. EXEC, TME and MTS are sought after.

DEC/VAX CONTRACTS

DEC and VAX contractors are always in demand with Macro 11 or Coral, Mumps or Basic +. 11/780 VMS people are at a premium. We have these type of requirements all over London and the South.

UNIVAC CONTRACTS

In London, Essex and Herts we need Univac 1100 people with COBOL ± Assembler with MAPPER, DMS 1100 and TIP.

TANDEM CONTRACTS

In the UK, USA and Australia we need Tandem expertise at all levels.

OTHER CONTRACTS

If you have Honeywell, Burroughs, Zilog, Perkin Elmer or any other expertise we will be interested to talk to you.

Please complete the coupon and send to:
Span Computer Contracts, Freepost 37 London W1E 6UZ

Please send me more details on Span's service
I am an existing contractor ☐
I am thinking of going contract ☐
(2223)

Work

Ref CW20J

SPAN COMPUTER CONTRACTS — A SPAN GROUP COMPANY

43-44 GREAT WINDMILL STREET, LONDON W1V 7PA
TELEPHONE: 01-734 7394 24 HOUR ANSWERPHONE

APPLICATIONS & SOFTWARE DEVELOPMENT

UK Network – Electronic Point-of-Sale – Distributed Processing

In line with continued business growth and long term D.P. development strategy, MFI – Europe's fastest growing furniture retailer – is currently seeking additional DEC software/applications specialists for their UK headquarters, at present situated in Wembley, but transferring to Edgware during 1984.

Programmer/Analysts

£7K-£12K plus car

Substantial reorganisation and expansion within the applications arena has provided opportunities 'across the board' for Programmer/Analysts with a minimum of one year's FORTRAN and/or BASIC experience gained in a commercial environment.

Positions are available at all levels of technical expertise encompassing broadly based and diverse commercial application areas, in an installation making extensive use of database and on-line programming techniques.

MFI

WEMBLEY/ EDGWARE

Software Programmer

£12K-£16K plus car

The installation at present houses an impressive array of DEC computers running under both RSX11M+ and RSTS/E incorporating DATATRIEVE and DECNET; all retail system software being written in MACRO 11.

Making a direct impact on all software development/ maintenance from the outset, the successful applicant should possess a thorough understanding of the above language, together with an indepth knowledge of RSX11M+ or M.

These key positions, as one would expect, offer attractive remuneration packages to include Company cars at the more senior levels, plus share participation scheme, BUPA, free life assurance and discount on Company products. Relocation assistance will also be provided where deemed necessary.

For immediate consideration contact **Adrian Hardy** on **01-935 0671** (24 hour answering service) or Ashford, Middlesex (07842) 46026 evenings and weekends.

Technical, Sales & Management Appointments

SCR

Specialist Computer Recruitment Ltd

SOUTH: James House, 46 James Street, London W1M 5HS 01-935 0671/486 0461
MIDLANDS & INTERNATIONAL: 35-37 Great Charles Street, Queensway, Birmingham B3 3JY 021-236 3781
NORTH: International House, 84 Deansgate, Manchester M3 2ER 061-833 0427
BELGIUM: Avenue Louise 327, Boite 4, 1050 Bruxelles 010 322-640 7151/71
HOLLAND: Willemsparkweg 92, 1071 H.M. Amsterdam 010 3120-760947

DALROTH

Systems Expertise Sales Potential

Basic c£10,500 + car + commission

(on quota earnings of £16,000)
(Existing staff have exceeded this figure)

SyncSort Technology Limited, with their headquarters in Berkshire, market and support their own products in the UK and Europe. The Company have an established and satisfied customer base for their OS, DOS and CMS software products and currently have two vacancies:

For one of the positions the successful applicant will have a background in any of the following: Systems Programming/Systems Engineering, Systems Support/Operations Support, Assembler Programming and ideally experience in OS, DOS and CM/CMS.

For the other position a sales background is essential (this need not have been in DP), plus a minimum of 1½ years in one of the above functions in an IBM installation.

The Company is willing to consider a negotiable package to suit the right individual, and will of course offer full training in their products, both in Europe and the USA.

For further information please write to Dalroth and Partners, 4 Half Moon Street, London W1Y 7RA, quoting ref. 9948, or telephone Jenny Dalrymple-Hay, daytime 01-493 2947; evenings Beaconsfield (04946) 4579, or Graham Cottingham, daytime Reading (0734) 478335, evenings (0734) 474129.

DALROTH & PARTNERS LTD 4 HALF MOON STREET LONDON W1

(2240)

Atari

Customer Support

We need a micro enthusiast, preferably an Atari owner, to talk to the users of the ATARI 400 and ATARI 800 Home Computers and answer their queries and questions.

Due to our rapid growth we have been able to promote the senior person in this group and we now need to replace him.

To apply you must have micro experience, preferably Atari specific and be fully competent in BASIC. If you have experience of ASSEMBLER this would be a plus point. You must be able to differentiate between hardware/peripheral/software/user problems and clearly communicate the answers.

Your personality must be energetic and outgoing with a pleasant telephone manner. As well as dealing with customers on the phone you will attend exhibitions and user group meetings. You will also be responsible for training other Atari staff and maintaining reference sources.

Based in Slough, some travel is involved, and therefore a full driving licence is required. Preferred age range is 23-35 as it is unlikely that anyone under 23 years of age will have sufficient experience.

We offer a very competitive salary supported by a generous benefits package. If you can bring us a flexible and analytical approach, prospects for career development could hardly be better. We're succeeding in a fast-moving field and we're looking for an ambitious man or woman to succeed with us. Please write today with full personal and career details to:

ATARI

David Horrath, Consultant, Atari International (UK) Inc., Atari House, Railway Terrace, Slough, Berkshire.

HP3000

CONTRACT PROGRAMMERS X 6

URGENT

KPG 01-948 5922 (SOLE AGENTS) (Emp Agy)

(2265)

ComputerWeekly

SOFTWARE EDITOR

Salary up to £10,400 plus £300 reading allowance

A software editor is needed to join a team of 15 journalists on Computer Weekly.

The ideal person would have proven journalistic skills as well as experience in the software field. But lack of journalistic experience should not inhibit anyone with a good software background and the energy and flair to hold down a senior job on a large weekly.

The successful candidate will be responsible for all software coverage on the journal, including a weekly software page.

Computer Weekly circulates 100,000 copies, is based at Sutton, Surrey, and is a major title within IPC Business Press, itself the world's largest publisher of trade and technical journals. The computer publishing market is showing rapid growth. Computer Weekly launched two ancillary publications and a number of exhibitions and conferences in the past year, and career opportunities reflect that.

Write to the editor setting out your full c.v., your job content over the past few years, and your reasons for believing you are the right person for this position. Address your letter to: DAVID CRAVER, THE EDITOR, COMPUTER WEEKLY, QUADRANT HOUSE, THE QUADRANT, SUTTON, SURREY SM2 5AS, and mark the envelope confidential. All terms and conditions are in accordance with the IPC/NUJ Agreement.

IPC BUSINESS PRESS IS AN EQUAL OPPORTUNITY EMPLOYER

RECRUITMENT CONSULTANCY

LONDON £12-£25,000 pa BIRMINGHAM

T.C.R. are seeking to expand their range of Advertising and Recruitment services to the Data Processing Sector by the addition of a number of Consultants.

The people we are looking for will be able to demonstrate a good track record in a similar role or alternatively have had experience at a senior level within the computer services or systems and programming environment. Probably aged between 25 and 35 the successful candidates will have a good level of education and possess the inter-personnel skills necessary for these challenging and rewarding positions. We would be particularly interested in talking to Midlands-based people capable of taking on MANAGERIAL responsibilities in the near future.

A very high level of income is envisaged for those with the ambition and determination to succeed, the remuneration package consisting of basic salary, commission, guarantee, bonus, health care plan and company car where appropriate.

Phone or write to ROGER WILKINS at:

TCR **Targa Computer Recruitment**
6 Liverpool Street London EC2M 7NH Telephone 01-283 9941 Telex 894858

2237

SENIOR ANALYST PROGRAMMER

ESSEX — to £13,000

An excellent opportunity for a person capable of leading staff and standing in for his or her Project Leader when required. Experience in the design and implementation of CICS-COBOL systems for financial applications will be required and our clients offer in return an excellent opportunity for personal development and a good benefits package. Ref: R3673

PROGRAMMER

LONDON — c£9,000

An immediate career opportunity has occurred for a Programmer with solid BASIC/RSTSE experience but with working knowledge of COBOL in their background. The job will involve a growing Analysis content, some travel and diversification of systems. A valuable BENEFITS package is offered in addition to the appropriate salary. Ref: C4186

ANALYST

CITY — c£11,000 + MORTGAGE

Our clients are a major member of the banking sector. They are looking for a Systems Analyst who has had exposure to 'wholesale' banking applications such as Eurobonds, Dealing, FX etc. This could be an opportunity for a person who has gained real analysis experience as an Analyst Programmer. The usual range of banking benefits apply. Ref: R4184

PROGRAMMERS AND ANALYST/PROGRAMMERS

LONDON/HOME COUNTIES — £NEG

We are currently seeking Programmers and Analyst/Programmers at all levels for several major companies situated in London and the Home Counties. Our clients need COBOL people, with ICL experience and at certain levels proven analytical skills or supervisory backgrounds. Good negotiable salaries and comprehensive benefits packages including, where necessary, relocation are available for all positions. Ref: C3649

ANALYST/PROGRAMMERS

CITY — to £11,000

Continued commitment to development of on-line systems has created the need for ambitious analyst/programmers at our clients, a major city-based insurance company. A solid IBM CICS-COBOL background is required and in return a substantial package including a generous salary is offered. There is ample scope for personal advancement in this expanding department. Ref: R4187

ANALYST/PROGRAMMERS

CITY — to £12,000

A major Systems House, currently developing Banking and Insurance systems utilising the latest DEC VAX and PDP equipment is seeking several proven Analyst/Programmers. If your background has involved DEC systems and good Basic or Cobol experience, allied to formal analysis skills, an exciting career opportunity is immediately available to you. Ref: C4085

TCR **Targa Computer Recruitment**
6 Liverpool Street London EC2M 7NH Telephone 01-283 9941 Telex 894858

2238

Job Spot

Link-Miles

PROGRAMMERS £ NEGOTIABLE

Link-Miles is an independent division of the international Singer Company designing and manufacturing advanced flight simulators for commercial airlines and military users throughout the world. Expansion has created vacancies for **Programmers** with at least two years' experience gained in a scientific environment. Projects will involve utilising high and low level languages on complex systems such as real time executive software to control multi-processing minicomputers and programming alpha-numeric and graphical colour CRT display systems for flight instructor stations. Link-Miles offer excellent conditions which include highly competitive salaries, generous relocation package, five weeks' holiday, pension scheme, etc.

LOCATION: SUSSEX JA811/1

NCR

SYSTEMS AUDITOR £ attractive package

NCR – One of the world's largest computer companies seeks a **Systems Auditor** to join the European Region Corporate Audit Group based in London. As a senior member of the team, the auditor will undertake analysis, audits and developments of EDP systems plus occasional related operational and financial functions. Applicants will ideally have a proven track record in computer audit although training will be given to those analysts with a comprehensive understanding of EDP and a knowledge of business practices, procedures and controls. In addition to an attractive salary and benefits package and the opportunity for regular world-wide travel.

LOCATION: LONDON JA811/2

REAL TIME DEVELOPMENTS LTD

PROGRAMMERS SOFTWARE ENGINEERS CONSULTANTS TO £14,000

Real Time Developments are a successful company with a commitment to providing quality software services. Increased business has created a requirement for a number of highly motivated and adaptable **Programmers, Software Engineers** and **Consultants** with a background in any mini/micro environment particularly PDP11 or Z80. Candidates should be educated to degree level and will have gained their experience using high level and Assembler languages. A knowledge of Real Time Software, Data Communications or Industrial Automation applications will be advantageous. In addition to an excellent salary, RTD offer a range of benefits, including relocation, normally associated with a thriving organisation.

LOCATION: HAMPSHIRE JA811/3

dp Confidential Reply

CONSULTANTS TO £17,000 + CAR

Our client is one of Europe's leading systems consultancies with a commitment to providing quality software services. Increased business has created a requirement for **Consultants** to work on a number of projects within a complete range of military applications and software. The successful candidates will have proven ability in any of the following areas:

- ★ DATABASE TECHNOLOGY
- ★ REALTIME SYSTEMS
- ★ MINI/MICRO HARDWARE (preferably DEC)
- ★ ASSEMBLERS, FORTRAN, COBOL, PASCAL

In return our client offers excellent salaries, in a range according to experience and a comprehensive benefits package.

PK810/4

CTL

SYSTEMS ENGINEER (Hardware) to £13,000 + Car

Since the company's formation in 1966, Computer Technology Limited, have seen a substantial growth and established market leadership in the field of transaction orientated minicomputers. This success has created a requirement for an adaptable and self motivated **Systems Engineer** who will be responsible for preventive and corrective maintenance of a CTL system sited on customer premises. Applicants should have a minimum of three years' experience in a mini or mainframe environment and ideally have a relevant qualification or equivalent forces training in electrical/electronic engineering. In addition to an excellent salary and benefits package, CTL will provide a company car.

LOCATION: CENTRAL LONDON JA811/5

PROGRAMMERS TO £10,000

The Teleprocessing Computer Centre, an established on-line service bureau and software house, have agreed a strategy placing them at the threshold of a substantial development phase. The Company wish to recruit **Programmers** with at least 3½ years' experience, most of which should be Cobol, to be involved in the development of major commercial products. A practical knowledge of structured programming techniques is required, gained ideally in a software house or bureau environment. Candidates should be highly adaptable and self-motivated with the ability to meet deadlines. In return the Company offer good salaries and working conditions according to experience.

LOCATION: SLOUGH JA811/6

Action..

ring or send the coupon to D.P. Recruitment Ltd, Freepost, London W5 2ST 01-567 6501

Name ....
Address ....
....
Home tel .... Work tel .... Ext ......
I am interested in Ref ....

(2206)

MANAGEMENT & EXECUTIVE SELECTION

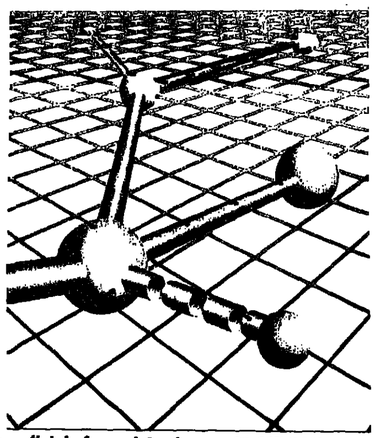
telephone 01-637 9611

STRATEGIC MARKETING

PRODUCT MANAGER
Interconnections & Terminals

c£16k plus car

- IBM literate
- Knowledge of desk top micros
- Marketing Product Specification Experience



PRODUCT MANAGER
Networks & Applications

c£16k plus car

- Experience Conceptual Knowledge of Networks within Integrated Office Systems
- Competitive Product Analysis
- Marketing Product Specification Experience

The Company

We have been retained by a Major British Telecommunications Company to identify and select Two Product Marketing Managers for a newly created division. The Divisions' specific function is to operationally and functionally co-ordinate the design, development and marketing of integrated office systems.

The Division is ideally positioned to gain from the company's substantial and continuing investment in the research and development of local area networks, terminals and applications services.

Reporting to the Marketing and Manager, these roles are seen as vital to the success and growth of the Division.

Preferred Experience

Candidates, male or female, should be between the ages of 28 and 38 and have an education to degree level in business management or a technical field, a strong sales and product marketing background gained within a computer/peripherals / electronics company, the ability to think conceptually and to communicate effectively in both the spoken and written word.

Personal drive and a results orientation are seen as key qualities to ensure success and rapid career progression.

These positions are based in North London and company benefits are as one would expect from a major organisation.

Call Kathy Sinclair or Karen Whelan, immediately for an interview, on 01-637 9611

Suite 201/6 Albany House 324 Regent Street London W1R 5AA 01-637 9611

MANAGEMENT & EXECUTIVE SELECTION (2204)

Computer Career Consultants

PROGRAMMER/ANALYST

SALARY PACKAGE CIRCA £25K TAX FREE
+ EXCELLENT BENEFITS

SAUDI ARABIA

Our clients have a vacancy for a rather special Systems Analyst with some DP Management experience, to take on a planning and design project in a major port complex in the Middle East. He will become part of a growing team of experts in a developing environment.

Candidates, aged between 32 and 40, must have at least five years' Analyst experience with a programming background. Experience in a Project Leader role would be an advantage. You must also hold a Computer Science degree (or equivalent) and have had significant involvement in developing major commercial/business applications using COBOL on Siemens (preferably) or IBM systems.

The main responsibilities will be to manage a small computer centre and its staff, design and implement programs to meet port operational needs and advise on future project and software development. Preparation of clear, concise reports and the ability to direct staff effectively are prime requirements. The system, which is mainly on-line with some real-time input, consists of a Siemens 7531 compact computer 2 x 300MB Disk Drives, 1 x Magnetic Tape Unit and 6 VDU's running under IDMS database.

This is a demanding but satisfying post which offers, in addition to the tax-free salary package, free accommodation, medical cover, transport and air fares, for the right man. The contract is of a long term nature, initially on short (3 month) tours, with married accompanied status (subject to usual Saudi Visa requirements).

To learn more about this exciting opportunity, please contact Don Whitbread.

(2214)

Chiltern House·Oxford Road·Aylesbury HP19 3EQ
Telephone: Aylesbury (0296) 34436 · Licence No. SE 5996

Computer Career Consultants

SALES EXECUTIVES

Let 1983 be your most successful year to date.

We have been asked by some of the country's leading computer manufacturers, to identify the successful Sales Executives to fill the following specialised markets:

PRINTER SALES MANAGER (O.E.M.) £14 to £15K base salary O.T.E. £25K + Car. Based in Bucks. Ability to lead and motivate a sales team and introduce a new product range into the market place.

MULTI SCREEN BUSINESS SYSTEMS £12 to £13K base O.T.E. £25K + Car. British manufacturer. Midlands and South-West territories three vacancies. Applicants must have sound business systems sales experience, knowledge of accounting and a degree would be a distinct advantage.

BUSINESS SYSTEMS SALES EXECUTIVE £8.5 to £12K base O.T.E. £20K + Car. Territories – Northern and Southern Home Counties and West Country. Four vacancies. Candidates must have proven sales experience of fixed disk and/or micro based systems to end users.

TERMINAL & MICRO BASED SYSTEM SALES £8.5K base O.T.E. £18L + Car. British owned manufacturer and distributor of micro-based systems and terminals, requires three Sales Executives. Territories – North and South London and Northern Home Counties. Knowledge of software an advantage. This is a unique opportunity to join a company with a very large user base and step into very lucrative territories.

For detailed information about any of these positions, please contact Don Whitbread.

(2214)

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Major Retail Development

Two Key Management Opportunities

South Coast

Substantial Benefits (including relocation assistance)

This UK market-leader is currently embarking on a major development programme involving the development of sophisticated Electronic Point-of-Sale systems which will link a nationwide chain of retail outlets to their Data Centre in Hampshire. They are involved in the development and conversion of existing systems to run on newly installed IBM 4300 hardware. They seek to appoint two D.P professionals to spearhead a planned development programme for the 1980's which will see the Company emerge as one of the most technically advanced retail organisations in the UK.

EPOS Project Manager — to c£15K + car

The first responsibility of the Project Manager during 1983 will be to prepare a cost benefit study in order that a choice can be made between the different manufacturers hardware presently on trial. In addition he will be responsible for the design or selection of an Inventory Management System for implementation before the end of 1983. Following hardware selection the Project Manager will assume responsibility for the implementation of the approved system throughout the Group. The successful candidate must be able to demonstrate previous project management experience in EPOS systems development. Ideally he/she will have had experience in the retail environment, communications and IBM hardware.

Systems Development Manager — to c£14K

Initially the responsibility will be to establish departmental systems design and programming standards, control the maintenance of existing systems and liaise, direct and monitor the development work presently being carried out by software houses. As required during 1983 suitably qualified development staff are to be recruited to assist in future project development across a broad spectrum of business activities. The SDM will take responsibility for the building of the team as well as managing and controlling the development plan in liaison with the Business Analysts. Once again the successful candidate must be able to demonstate previous project leading experience, plus a sound background in analysis, design and programming ideally in an IBM on-line database environment.

At initial interview for both these positions candidates will be expected to demonstrate the ability to liaise effectively with a wide range of DP and non-DP personnel. For further information please contact our Advising Consultant **Steve Stark** on **01-935 0671** during working hours or alternatively submit a detailed cv to him at the London office.

Technical Sales & Management Appointments

SPL

Specialist Computer Recruitment Ltd

SOUTH James House, 48 James Street, London W1M 5HS. 01-935 0671/486 0461

MIDLANDS & INTERNATIONAL 36-37 Great Charles Street, Queensway, Birmingham B3 3JY 021-236 3781

NORTH International House, 84 Deansgate, Manchester M3 2ER 061-833 0427

BELGIUM Avenue Louise 327, Boite 4, 1050 Bruxelles 010 322-640 7151/71

HOLLAND Willemsparkweg 92, 1071 H M Amsterdam 010 3125-760947

CITY OF WAKEFIELD METROPOLITAN DISTRICT COUNCIL FINANCE DEPARTMENT

SENIOR PROGRAMMERS
SO1 £8,658-£9,231

PROGRAMMERS AP4 £6,873-£4,545

The above additional staff are required to enhance the range of services provided to all of the Council's departments. The Authority utilises C.M.C. Sequoia and Reality equipment and the next phase of development will involve a further extension of the existing large terminal network. Extensive programming experience is required for the senior posts, together with the ability to make major contributions towards system design and work directly without supervision with user departments. Requirements for the programmers posts are at least two years sound programming experience and the ability to work directly with users within a defined system outline. C.M.C. experience is desirable but not essential. Further information can be obtained from Mr Twohig, Tel. Wakefield 370211, Ext 203.

Requests for application forms (accompanied by a s.a.e.) should be addressed to The Chief Executive, (Personnel Section), Town Hall, Wakefield, to be returned by 7.2.1983. (2276)

COMPUTER ENGINEERS
£8,000 + CAR

High growth computer subsidiary of US multinational company seeks experienced Field Service Engineers based in London and N. Counties.

If you have a good peripheral/small systems background and feel you need a change to young expanding and ambitious environment with good promotion prospects – ring now for details – but hurry.

Dee Executive Ltd (Agy.) 01-549 9251 (2280)

BOX NUMBERS

Box number replies should be addressed to:

Box Number .....

c/o Computer Weekly
Quadrant House, The Quadrant
Sutton, Surrey SM2 5AS

RECRUITMENT CONSULTANTS

starting package from £15,000 + Car

WINDSOR

Kramer Westfield is a small, effective, specialist consultancy providing expertise to high technology clients. Demand for our services has resulted in the need to augment our team by the appointment of two new consultants.

The role of consultant is a demanding one, requiring a blend of communication skills, creative ability and the capacity for hard sustained effort. Handling assignments for top UK and European management means the need for personal credibility and influence is essential; a sense of humour also helps!

If you are aged 25-35, currently in recruitment or high technology sales/engineering and would enjoy the rewards of operating within a small, close-knit team then we would like to hear from you. You will receive a high base salary, attractive bonuses, company car, BUPA and work from prestigious new offices.

Applicants, male or female, should contact Martin Warner or Paul Child on Windsor (07535) 56155 or 04868 7403 evenings and weekends, or write to Kramer Westfield Associates Ltd., 25 Victoria Street, Windsor, Berks SL4 1HE

Kramer Westfield

AMERICA UK EUROPE

IBM System/38

RPG III to £15,000+Benefits

With expansion in the U.K., Europe and America, we need PROGRAMMERS and ANALYSTS with good IBM System/38 experience to work in our various offices on in-house projects, or alternatively bespoke work in client premises.

As one of the market leaders in the System/38 field we can offer you a highly rewardable career opportunity.

For further details contact:
Ray Slattery,
DATASENSE LIMITED, Blue Line House,
Angel Road, Edmonton, London N18 3BJ.
Telephone 01-803 8618.

datasense

PROJECT MANAGEMENT IN CAD/CAM

Computervision is the world leader in the design and manufacture of Computer Aided Design/Computer Aided Manufacturing (CAD/CAM) systems. We are a young, dynamic, highly profitable company with an impressive growth record in 1982, and a major programme of expansion for 83.

To sustain our growth and maintain our commitment to a high level of customer satisfaction, we are recruiting additional personnel throughout the UK to join our comprehensive support team helping customers to increase productivity.

SENIOR PROJECT MANAGER — Midlands
A key position in major projects — Salary negotiable

Responsibilities will include:

- ★ Planning and organising from concept stage
- ★ Executive level customer liaison
- ★ Ensuring delivery of optimal solutions through sensitivity to customer requirements
- ★ Acquisition and effective co-ordination of all resources necessary to ensure a successful project
- ★ Close liaison with Computervision manufacturing and logistics

A degree in a technical subject and a background in computer hardware and/or software must be coupled with experience of total responsibility for at least one major project. Personal qualities of tenacity and resourcefulness, together with sound planning and commercial skills are also essential. Knowledge of CAD/CAM would be an advantage.

DESIGN CONSULTANTS — Midlands & North

We are looking for individuals with an industrial background in mechanical, electrical or printed circuit design to join our existing team of consultants introducing new CAD/CAM systems on customer sites.

Candidates should have at least HNC/HND level qualifications and a strong background in manufacturing industry. Knowledge of CAD/CAM or teaching experience would be an advantage, but is not essential.

FIELD SERVICE ENGINEERS — England & Scotland

Our systems are installed throughout the UK and opportunities will therefore be occurring in all areas for engineers with at least two years' experience of mainframe or mini-computer systems.

JUNIOR COMPUTER ENGINEERS

We are seeking to recruit two Junior Engineers whose initial duties will involve installing systems at clients' premises. However, as part of our policy of developing skills from within, we operate a two year programme to equip Junior Engineers for a role in Field Service Engineering.

Candidates must have an HNC/HND in Electrical/Electronic Engineering with at least four years' industrial electronics experience. Knowledge of computer systems is not essential. The willingness to work throughout the UK is a must.

Salaries are highly competitive and we offer a first-class benefits package which includes Pension, Profit Sharing Bonus and free Medical and Life Assurance.

Please send a detailed resume, mentioning which post you are interested in, or contact Clive Wright at the address and telephone number below for an application form.

Computervision Limited,
Computervision Centre,
Central House, New Street,
Basingstoke, Hants. RG21 1DP.
Tel: Basingstoke (0256) 58133.

COMPUTERVISION (2242)

Productivity. . . by Design

Freelancers . . .

. . . in the North of England and Scotland who are available now or in the near future are invited to contact me, Peter Moore, to discuss a variety of interesting and rewarding assignments throughout the UK and overseas.

P-E Computer Services Limited
Winchester House, Fountain Street, Manchester M2 2EF. Telephone: 061-228 2776 (2145)

PE

SALES EXECUTIVES

SALES EXECUTIVES—TERMINALS
To sell range of emulator terminals. Based Peterborough. Ideally living in (a) Birmingham (b) London North of Thames. Basic £9k. Car. £21k

SALES EXECUTIVES—MINIS
To sell minicomputers based London area. Experienced mini sales executives only. Basic £15k. Car. £30k

SALES EXECUTIVES—Bureau and SW
Reliability and security offered by large supplier of bureau, turnkey and SW services. Basic neg. Car. To £20k

SALES EXECUTIVES—MICROS & MINIS
Good prospects with a major U.K. supplier to cover Greater London area. Basic to £8k. Car. £20k

SALES EXECUTIVES—MINIS
Major International Manufacturer requires experienced Sales Executives for West London. High basic. Car. £20k

Plus many other good sales vacancies.
Telephone for an appointment.

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(2241)

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This complex role will require the person to be fully aware of the interaction of production, test, quality and other manufacturing related disciplines and the resulting reliance on the precision and integrity of the Engineer's work.

Whilst based in the Cambridge area, the job has a distinct international flavour, and familiarity with differing safety standards dictated by different international markets, particularly the U.S., is essential.

An attractive package, including a highly competitive salary, performance-related bonus, together with, if necessary, comprehensive re-location arrangements will be available.

Please send a full c.v. detailing qualifications, experience to date, salary and quoting Reference CW/91 to:

Mr. C. Plowman,
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All letters from individuals will be opened, acknowledged and forwarded to our client. Please list separately any companies to which your application should not be sent.

(2211)

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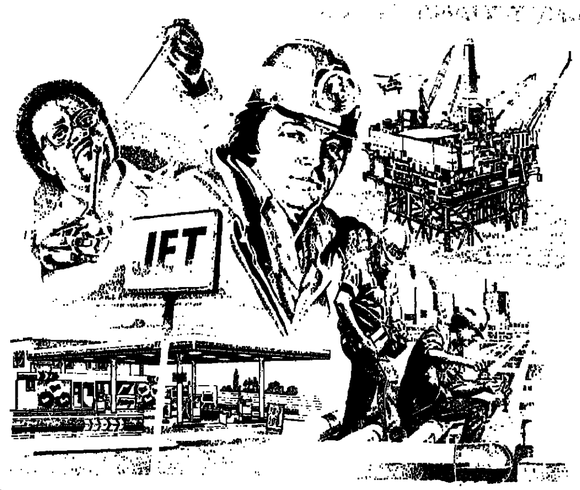

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The London Data Centre based, in W1. runs an 8 megabyte IBM 4341, under OS/MVS using CICS, with another 8 meg 4341 being installed in April 1983. This provides services to all Conoco's activities within the U.K.

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Most recruitment agencies forecast a rise in demand for contract workers . . . Chris Thornton reports

Skilled programmers may find 1983 is year of the freelance

THE bad news for freelance programmers is that 19% of data processing managers have stated that their demand for contract staff will take a turn for the worse in 1983. Better news is that 15% of data processing managers have said their demand for contract staff will increase over the year.

Even better, most recruitment agencies have forecast that 1983 ought to be a good year.

The contract sector of the market is one piece of the job action where action is an appropriate word. Even among the doom and gloom of slumps and depressions, freelancers with in-demand skills need never be out of work unless they want to be.

"People with specialist skills and especially those with experience on the up and coming manufacturers' machines like Wang, Hewlett-Packard and DEC should be in demand," said Shubrooks' Eric Oldham.

And Justin Broadbent, of Computech, concurred: "Prospects for this year are good," he said. "Companies seem to be increasing their budgets for development and software. Just from conversations I have had with project leaders and data processing managers it seems that projects that have been waiting for the green light over the last year to 18 months are all set to go ahead in 1983."

You will always find one recruiter who disagrees, though, and Peter Clark, of VNG, which has offices in Gerrards Cross in Buckinghamshire, and in Manchester, thinks the market is fairly static at the moment. But his company is growing rapidly.

Last January it had 66 contract people working and now it has 127. Furthermore, VNG is about to open a Midlands office, so it's nice to see someone making something of a static market.

Clark's other views are shared by most agencies, though. His assertion that there will be a demand for micro people and people with specific skills such as CICS teleprocessing, and database is shared by most recruiters.

Computech's Justin Broadbent adds that Honeywell skills are in demand at the moment, and he personally knows of one company which is constantly buying micros to evaluate them and therefore needs a constant supply of people. So if you've got micro skills, get down to Computech.

Broadbent also says that prospects for UK systems programmers who want to work abroad are very good at the moment, particularly in Holland and the US, where English programmers have always been highly regarded. According to a recent report the demand for contractors will be lowest in bureaux and the process industry and highest in education and research.

"Just from talking to project leaders and data processing managers," said Systems Support Services' David Butcher at the time, "it seems that projects they've been sitting on for months will be put into action in 1983."

"You've got to be bullish," commented Abraxas' Richard Merrigan. "The market may be shrinking, but if you've got good people you'll be OK."

Last year was the best yet for his company and it saw Abraxas increasing its overseas business and investing money abroad, particularly in Belgium and in the Middle East.

System Support Services' Butcher was quite confident that 1983 was going to be a good year at all skill levels.

"The only thing that may put employers off is the fact that contractors' rates may escalate. But I don't think that will happen and I believe 1983 will be a bumper year."

Abraxas' Merrigan doesn't share Butcher's optimism about the market in general. "The commercial market is shrinking," he says, "and skills in that field are not so much in demand as they were."

One of the few areas that continues to expand, whether you like it or not, is Ministry of Defence work. Large organisations in that field, like Marconi and Ferranti, are running down their numbers of full-time specialist people

Alan Morton, of Guardian Staff Services in Manchester, says that "1983 is going to be an exceptional year."

In the North-west and North-east, the traditional reason for increases in demand for contract staff is prevalent: companies shelve projects when there is a slump, then need contract people quickly when the projects pick up again. So the market is a bit different in the North, and Morton spotlighted one difference: "These days getting people in is the right priority," he said. "They are not quite so specific about skills. If they can't find someone with exactly the right qualifications they are willing to take someone else."

One of the nice things about being freelance, of course, is that you can work whatever the fancy takes you. Holland and the US have already [illegible] mentioned as [illegible] places for British [illegible] grammers and is the [illegible] itself the West [illegible] which is an appealing [illegible] is booming. According [illegible] agencies there, [illegible] are in short supply.

So if you're good, [illegible] meeting people, can [illegible] most working [illegible] easily and get on well [illegible] people, don't mind [illegible] ing the security of a [illegible] job with pension [illegible] paid holidays, sick pay [illegible] sports facilities, and [illegible] and like travelling then [illegible] could be the year of the [illegible] lance.

". . . And of course I'm not one of those long-haired, scruffy programming types."

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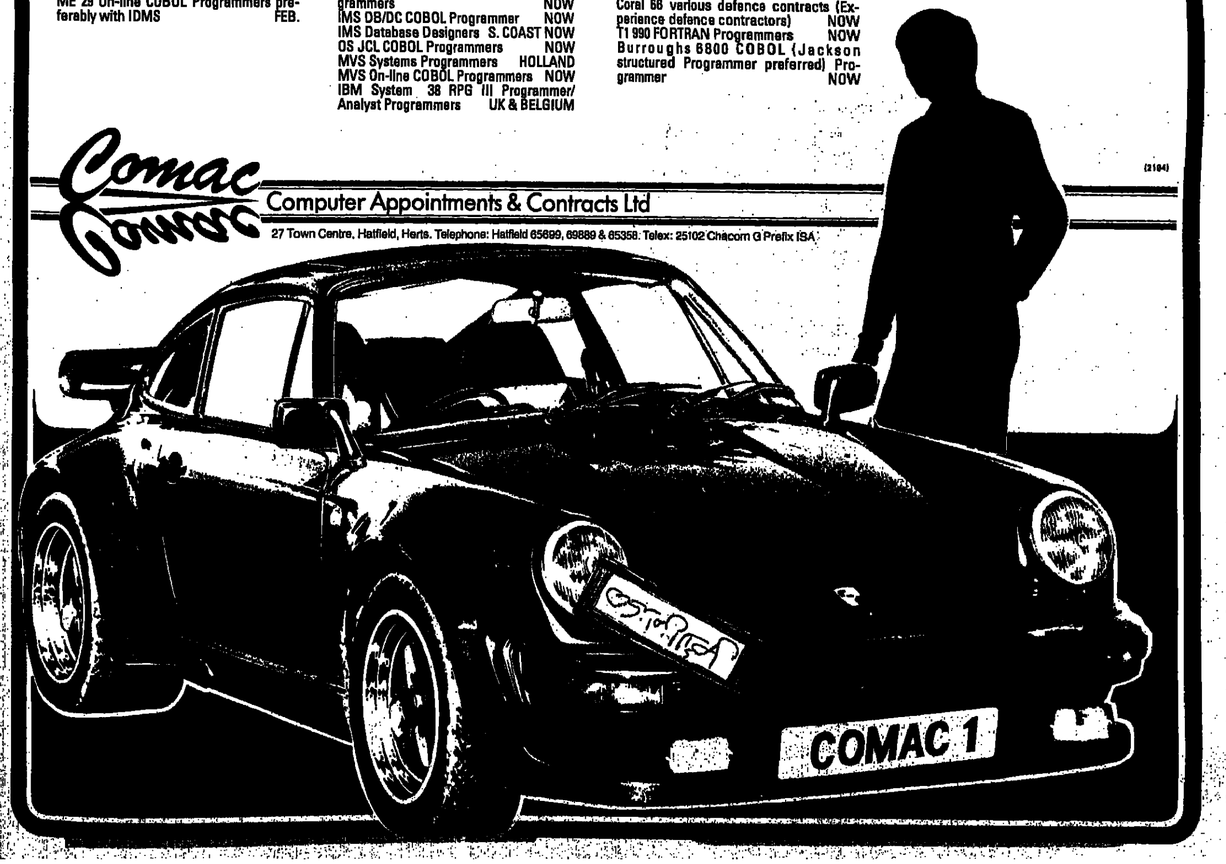

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(2243)

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3. Free furnished accommodation
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Only experienced candidates should apply with c.v. to Computer Weekly Box 1241. Interviews expected mid February.

(2269)

MID-GLAMORGAN COUNTY COUNCIL
COUNTY TREASURER'S DEPARTMENT

SYSTEMS ANALYST

£8,658 - £10,071

The Authority operates an ICL 2976 computer under the VME/B operating system and a vacancy has arisen for a Systems Analyst within a project team concerned with the development of systems for District Councils.

Applicants should preferably have a suitable qualification and a minimum of one year's systems analysis experience.

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(2268)

PROGRAMMERS

LONDON — IBM COBOL — to £10,000 + MORTGAGE

CICS TRAINING! We have been retained by this impressive international company in Central London to recruit a team of programmers. These positions are due to expansion and the embarkation of NEW DEVELOPMENT PROJECTS. The company retains IBM 4341 hardware using COBOL, CICS and DL/1. Applicants must have a minimum of 18 months COBOL. Perks include Subsidised Mortgage, Flexi hours, Salary reviews within 3 months, Pension and Life Assurance Schemes. S.6952

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London & Brussels — Computing Services Association

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(MINI SYSTEMS)

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(2291)

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(2163)

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Job description and application form available from the Personnel Department on 01-600 9000 ext 2271, quoting ref TG/44.

(2296)

GMC
Greater Manchester Council
COUNTY TREASURY SYSTEMS DEVELOPMENT UNIT

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SO1/2 – £8658/£10,071 p.a.

The Computer Systems Development Unit provides a service to meet the administrative needs of the Council's departments, the Greater Manchester Police, Greater Manchester Fire Service, Greater Manchester Probation and After-Care Service and Manchester International Airport. An extensive central and remote computing network based on dual IBM 4341s, IBM 8100 and Philips P7000 distributed processors, is being developed.

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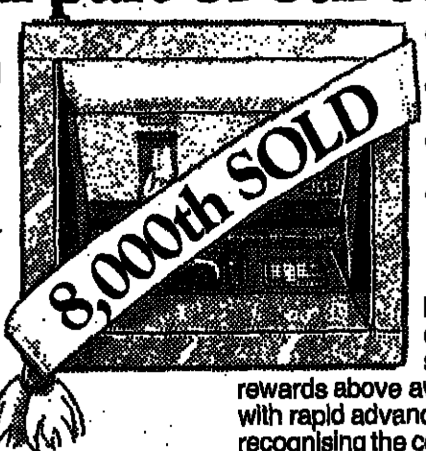

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Please telephone for an application form, or write giving full career details and present earnings, to:

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For further information, or to arrange an informal visit contact Mr B. Coker, Assistant Director of Finance (Audit) on 01-274 7722 Extension 2219.

Application forms are obtainable from the Personnel Officer, Director of Finance, London Borough of Lambeth, 18 Brixton Hill, London SW2 1RL. Or telephone 01-274 7722 Extension 3001. Closing date 24th January, 1983.

As part of Lambeth's Equal Opportunities Policy, applications are welcome from people regardless of disability, marital status, race or sex.

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(2277)

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Please write or telephone:

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Macro Marketing Ltd
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SALES BIT

Quality of Management – 38

Mud-slinging will get you nowhere!

THERE is nothing in selling quite so futile as mud-slinging. Whether the target is a competitor, a past employer or an existing colleague, everybody loses when the dialogue gets down to the degrading level of abuse, derision and condemnation.

Such an attack could come in the form of a direct assault on the capability of a product, a sensational revelation of confidential information, the breaking of a personal confidence, the negative criticism of a colleague, or belittling the integrity of a competitor.

Whatever the method employed, there is unlikely to be any gain for anyone, least of all the instigator.

Behind all mud-slinging incidents is the belief that there is some benefit to be gained by the initiator. There is the personal satisfaction of "revealing the truth", "gaining a reprisal", "putting the record straight", and so on, but that is usually short-lived.

There is also the apparent reflected enhancement of the quality of one's product or oneself by "pointing out the warts on the other guy's face". That is self-deluding, for above all, it assumes that others have insufficient perception to identify the truth for themselves. That is patronisation at its worst!

Constructive criticism of competition is acceptable in my book, but full frontal abuse is the best way of destroying the credibility of one's company, one's product and oneself. It is very tempting, when you know that a competitive product is totally inappropriate to "tell it like it is". Don't do it! By all means suggest that, for instance, the client checks the validity of a particular claim, but don't suggest your competitor is lying or that his product is inferior.

After all, the chances are the client knows more about your competitor's shortcomings than you do!

A few weeks ago I saw a piece of public mud-slinging that shows how futile and harmful this sort of behaviour can be. It was the classic disgruntled employee syndrome. The target was a major manufacturer. Shock revelation – computer company going down the tubes, with facts to prove it.

There is nothing more damaging than half-truths and reality presented out of context. I know the company and I knew that the reality was not only nothing like as bad nor were the problems it was facing radically different from those being experienced by its competitors.

Yet anyone reading it would assume the bailiffs were already on their way. The effect must have been shocking and demotivating for the company's employees, clients and prospects, and the perpetrator must feel well pleased with himself.

Honour is fulfilled? Of course it isn't! Ego is satisfied, pride is fed – but integrity is destroyed, dignity is degraded. Not a very satisfactory exchange.

In more realistic terms, reprisals can lead to vendettas. The disgruntled employee may well find that the employer he has done down will send a press-cutting to his next employer with the legend "Here's an example of this man's integrity", or "How would you like some publicity like this?" Result, someone who may never work again; a very high price to pay for a brief moment of emotional satisfaction.

The fact is, no one is ever impressed by the individual who announces the shortcomings of others in a degrading manner. The extent of the harm done to the character of the victim is only exceeded by the damage to the credibility of the one who makes the accusation.

Alan Williams

COURSES

■ HULL College of Further Education's Micro Centre provides education training and consultancy in the application of microcomputers in the fields of word and data processing. Courses lined up for this year include Advanced Programming, which puts the emphasis on designing programs for what are described as "real-life problems", and the special techniques required for microcomputer based software. It costs £65 + VAT for eight evenings. A two-day Word Processing Supervisor's course, costing £106 + VAT, aims to introduce the supervisor or senior operator to procedures and routines necessary for the efficient operation of WP systems. Details from the Micro Centre on (0482) 41451.

■ A SERIES of two day courses using the Micromodeller financial modelling package is to be held by ADP Network Services in February, March, April and May. The courses comprise half a day of tuition [illegible] modelling, using Micromodeller. The courses cost £200 and will be held at ADP's conference centre at 142 Great Portland Street, London W1. The course is suitable for the first-time micro user thinking of buying a system running under CP/M, or the existing micro user who wants practical experience of a Winchester disc-based machine using industry standard modelling software. Details: 01-353 0666.

PUZZLE ANSWER

7X is known to produce XXXXX . . . when multiplied by the Magic number, so let us consider the case where X = 1.

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The Magic number 37 and (3 times X) is another example of this phenomenon.

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(226)

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For further information please contact **Adrian Hardy** on **01 935 0671** (24 hour answering service) or Ashford, Middlesex **(07842) 46026** evenings and weekends.

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Product Manager c£13k

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Preferred Experience

Candidates, male or female, should be aged between 28-38 and have an education to degree level or equivalent. A strong sales and commercial marketing background gained within a high technology environment, and the ability to think conceptually and communicate effectively in both the written and spoken word.

The Position entails

- Liaison between UK and International Salesforces and Distributors.
- Evaluation of Special Marketing Requests.
- Budgeting and Price Book Responsibilities

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Call Kathy Sinclair or Karen Whelan immediately for an interview on 01-637 9611.

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